PC TOOLS

IBM
VERSION

DATA RECOVERY AND DOS UTILITIES

VERSION
5.5

Central Point Software INC
A MEMBER OF THE VIDEO TECHNOLOGY GROUP

PC Tools Utilities

Version 5.5

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Introduction

PC Tools Utilities™ is a complete package including a DOS shell, file and disk recovery, disk optimization, and file security system. PC Tools Utilities applications support the keyboard or mouse, pull-down menus with moveable and resizeable windows, and full color control. The DOS shell can be made "resident" so it is always available for your use.

PC Tools Utilities increases your efficiency by providing you with the following features:

- an intuitive and easy-to-learn user interface
- on-line help for quick answers and guidance
- full mouse and keyboard support
- memory-resident or standard DOS program, whichever you prefer
- Standard network-compatible DOS functions supported on Novell's NetWare and IBM Token-Ring

The PC Tools Utilities package includes the following programs:

PC Shell: a powerful utility program combining a window environment for ease of use, with all the critical DOS maintenance commands needed to efficiently manage your system. Copying, moving, deleting and comparing functions are included along with file and disk editing, system and data disk formatting, and subdirectory pruning and grafting. In addition, you can run other applications from PC Shell, recover deleted files, and map memory-resident programs.

Mirror/Rebuild: can provide protection against accidental erasure or formatting of your hard disk. Mirror keeps a backup copy of the File Allocation Table (FAT) and the root directory of your hard disk in a special hidden file. If someday you accidentally format your hard disk, you can quickly restore your data. Rebuild will do its best to restore your hard disk to the same state as Mirror recorded, effectively undoing the erasure or formatting. Mirror will also optionally create a delete tracking file that will save the full file name and all clusters a file occupied before it was deleted. The Undelete option of PC Tools Utilities will be able to use this information to fully recover accidentally deleted files automatically.

PC-Cache: is designed to speed up hard and floppy disk access by storing the most frequently used information in your computer's memory. It speeds up programs by reducing the number of times the computer has to wait for the disk when reading commonly used information.

Compress: an application that can optimize your hard disk's performance. Compress will check your hard disk for fragmentation and unfragment your files to improve disk access and aid in file recovery. It can move your subdirectories to the front of the hard disk so they may be accessed much faster. Compress can sort all your subdirectories simultaneously as it compresses. It will also check your hard disk for errors and move files out of the way of those errors.

PC Format: is a replacement for the DOS FORMAT.COM program. PC Format will format hard disks and floppy disks of all densities in such a manner that the PC Tools Utilities program Rebuild can recover their data.

PC Secure: is a fast and powerful tool for keeping your sensitive data and programs safe and secure. PC Secure can encrypt, decrypt, compress, and hide files on your disk. PC Secure uses the DES encryption system, which thoroughly randomizes the data and is virtually impossible to decrypt without the key. With the compression option turned on, PC Secure can reduce the size of most files from 25% to 60%. Files can be encrypted on one computer and decrypted on another, even if the other computer is a Macintosh® (requires the use of PC Tools Deluxe on the Macintosh).

If you purchased PC Tools Utilities from a dealer or mail order company, please take a moment now to fill out and send in the registration card. If you purchased PC Tools Utilities directly from Central Point Software, you are already registered as an owner, so you don't need to return the registration card. Being a registered owner entitles you to technical support and lets us tell you about product updates. When PC Tools Utilities is updated, all registered owners can purchase the update at a greatly reduced price.

Technical Support

If you need technical support for PC Tools Deluxe, please call (503) 690-8080. Dial 1 then extension 5700 anytime after the automated attendant has answered; you do not need to listen for the message to be completed. Our business hours are Monday-Friday, 8-5 PST. Please read the Technical Support appendix and complete the Technical Support Checklist before placing your call.

About this manual

The PC Tools Utilities manual is organized in the following chapters:

- An Installation chapter for setting up your system.

- A Getting Started chapter which explains the user interface.
- A chapter for each Utilities application.
- An appendix explaining memory-resident programs.
- A troubleshooting appendix.
- An appendix with technical support information.

Because not everyone will want or need to use all applications, the Utilities chapters are arranged so that you can quickly get started using any application by turning to the appropriate application chapter. Each chapter includes a quick overview of the application and shows you how to open the application and use the menus. Commands are arranged in the order they appear on the menus, and highlighted letters are indicated in the manual as underlined letters.

Installation

Hardware Requirements

PC Tools Utilities is designed to work with the IBM® PS/2 (all models): PC, PCjr, XT, AT, and most IBM-compatible computers. Your computer should have at least 512K of memory. If you want to keep PC Tools Utilities PC Shell "resident" in memory while other programs are running, it's a good idea to have 640K of memory. You need only one disk drive, although PC Tools Utilities can also work with multiple disk drives, and works better with either a hard disk or at least 320K of EMS memory.

To start up PC Tools Utilities, you need to boot your computer with version 3.0 (or higher) of DOS®. (We recommend that you use DOS 3.2 or higher.) Once PC Tools Utilities is running, it can work with disks formatted by any version of DOS.

Note: We have made a great effort to make PC Shell compatible with other resident programs. PC Shell is very "well–behaved" in its operation while some other resident programs are not. If you experience any problems with PC Shell and other resident programs, try changing the order in which your resident programs are loaded. (We'd also appreciate knowing which programs you had trouble with.) See the appendix entitled "Memory Resident Programs" for more information.

Mouse Users

PC Tools Deluxe is designed to perform optimally with a mouse. If you want to use a mouse, you must have its driver installed in your AUTOEXEC.BAT or your CONFIG.SYS file. See your mouse documentation for more information. If you are using a Microsoft mouse, then you should have version 6.14 or higher of the Microsoft Mouse driver. If you are using a Logitech/Dexxa mouse, you should have version 3.4x or higher of the mouse driver. Older mouse drivers may not work with all PC Tools Deluxe applications.

Installing to a Hard Disk

While PC Tools Utilities can be used on a floppy disk system, it really excels when you have a hard disk. **You need to use PC Setup to install all PC Tools Deluxe programs on your hard disk.** PC Setup will selectively install the programs for you based upon the choices you make.

PC Setup

PC Setup enables you to install the PC Tools Deluxe applications you wish to use. The installation procedure assumes you are installing from drive A. If you want to install from a different drive, substitute that drive letter for drive A in the following procedure:

1. Insert PC Tools Utilities disk number 1 in drive A.
   If you are at the C: prompt, type A:.
2. At the A> type: PCSETUP and press Enter.
3. Follow the instructions on the screen for installation.
4. Reboot the computer. You are now ready to begin using all of the PC Tools Utilities options.

PC Setup gives you the following four installation options:

1. Copy the PC Tools Deluxe files to your personal computer's hard disk.

   This option copies the PC Tools Deluxe programs you request and gives you the option of installing them by making modifications to your AUTOEXEC.BAT file. PC Setup will scan your hard drive and install many popular applications into PC Shell's application list. For example, Microsoft Word, WordPerfect, Excel, dBASE, Lotus 1-2-3 and most other popular programs are automatically added for you if they exist on your hard disk.

2. Copy the PC Tools Deluxe files to a network server's hard disk.

   This option copies the requested program files to a directory on a Novell NetWare or IBM Token-Ring network server. This should be done by a network supervisor since PC Setup will need write privileges to the directory where installation is done. Network Supervisors should read the section "Running on a Network" later in this chapter.

3. Change the configuration of a previous installation.

This option allows you to modify the way the PC Tools programs are installed in your AUTOEXEC.BAT file. It will not copy any files.

PC Setup will copy PC Tools Utilities (PC Shell, Compress, PC Secure, PC-Cache, Mirror, Rebuild, and PC Format) to a subdirectory on your hard disk. It also optionally installs Mirror in your AUTOEXEC.BAT file to protect against accidental format of your hard disk (see the Mirror/Rebuild chapter for more information), optionally installs PC-Cache in your AUTOEXEC.BAT file to speed up your hard disk (see the PC-Cache chapter for more information), optionally installs PC Shell in your AUTOEXEC file so it is resident, or runs every time you turn on your computer, and adds a Path statement so DOS can always find the PC Tools Utilities programs. Your original AUTOEXEC.BAT file is saved as AUTOEXEC.SAV in case you need to recover it.

PC Setup installs the PC Tools programs in the AUTOEXEC.BAT file after the last PATH statement in this order:

Mirror
PC-Cache
Desktop Background Telecommunications
PC Shell
Desktop

These programs must be installed in this order for them to function as described in the manual. If you plan to modify the AUTOEXEC.BAT file, make sure you do not change the loaded order of PC Tools programs. See the individual chapters and the Memory Resident Programs Appendix for more information about suggested loading order.

PC Setup also looks for FORMAT.COM programs in the root directory and in all Paths on your hard disk and renames them to FORMAT!.COM. It creates a batch file called FORMAT.BAT that runs PC Format anytime you type FORMAT. This allows you to recover both your hard and floppy disks from accidental formatting. If you ever want to run the original DOS format program, type: FORMAT! instead of FORMAT.

If you have an earlier version of PC Tools in the subdirectory you want to copy the new version of PC Tools into, PC Setup will overwrite any files of the same name but ignore any files that are not included in version 5. For example, COMPRESS.EXE (the new program) will overwrite COMPRESS.EXE (the old program).

If for any reason you wish to change the setup options made by PC Setup, you can use any file editor to edit your AUTOEXEC.BAT file.

When you use PC Setup to install your PC Tools programs, the "Files=" statement in your CONFIG.SYS file will increase by 3 regardless of the number you have specified because PC Tools Deluxe programs use at least three files in order to be activated inside your other applications.

If you receive a DOS error message using PC Setup, it could mean your AUTOEXEC.BAT, CONFIG.SYS, FORMAT.COM, or FORMAT.EXE are read-only. Change the read-only attribute using the DOS ATTRIB command or an older version of PC Shell (if you have one installed) and then run PC Setup.

Note: If you have been using any other menuing or DOS shell programs prior to installing PC Tools Utilities, you might not see PC Shell as expected when you reboot. If this happens, you will need to remove these programs from your AUTOEXEC.BAT file.

PC Tools Utilities Program Files

The following files on your distribution disks are necessary for executing PC Tools Utilities programs and should not be deleted:

PCSETUP.COM	PC Setup program
PCSHELL.EXE	PC Shell program
PCSHELL.OVL	PC Shell program overlay
PCSHELL.CFG	Configuration file (saves changes in screen size, colors, customized menus, etc.)
PCSHELL.HLP	PC Shell Help
PCRUN.COM	PC Shell--runs programs in resident mode
COMPRESS.EXE	Compress program
COMPRESS.HLP	Compress Help
PCSECURE.EXE	PC Secure program
PCSECURE.HLP	PC Secure Help
MIRROR.COM	Mirror program
REBUILD.COM	Rebuild program
PC-CACHE.COM	PC-Cache program
PCFORMAT.COM	PC Format program

These files have been included and may be deleted if you are in need of disk space:

README.TXT	Additions to the documentation
MI.COM	DOS memory mapping program
PC-CACHE.SYS	PC-Cache Bernoulli box system file

In addition, the following files will not be found on the distribution disk, but are created as needed by PC Tools Utilities programs:

PCSHELL.IMG	Program image (used in resident mode only)
PCSHELL.THM	Swapped memory area (used in resident mode only)
PCSHELL.IMX	Program image (used in Shell mode only)
PCSHELL.TRE	Tree List storage (used in Shell mode only)
MIRROR.FIL	System area image
MIRROR.BAK	Older version of MIRROR.FIL
MIRORSAV.FIL	Pointer file
PCTRACKR.DEL	Delete tracker data
PARTNSAV.FIL	Saves the partition table information
COMPRESS.CFG	Compress configuration
PCSECURE.CFG	PC Secure configuration

Running on a Network

IMPORTANT: You must purchase a copy of PC Tools Deluxe for every station on the network that has access to the PC Tools Deluxe programs or contact us to purchase a Network or Site license.

The PC Tools programs can be installed in a write-protected directory on a Novell NetWare or IBM Token Ring network server. They can then be run from any station on the network which has access to the files on the server. You (or your network supervisor) will need to make sure that the PC Tools server directory is in your path. In addition, you will need to set an environment variable, "PCTOOLS", specifying where PC Tools should put all user-specific files (PCSHELL.THM, PCSHELL.CFG, etc.). This needs to be a directory that is unique for each user and to which the user has write privileges. This environment variable is either added to the station's AUTOEXEC.BAT file or is done at the supervisor level on the network. If it is done in the station's AUTOEXEC.BAT file, it should look like this:

```
SET PCTOOLS = drive:\directory path
```

Where "drive:" is replaced with the drive letter and "\directory path" is replaced with the full path where PC Tools should place its user-specific files.

When PC Shell is used on a network, the networked drives that can be accessed will appear with your local drives on the Drive Command Line, under the horizontal menu bar. All of PC Shell's commands are available for use on networked drives except the following:

Directory Maintenance
    Prune and Graft
Directory Sort
Disk Info
Disk Map
File Map
Rename Volume
Search Disk
Undelete
Verify Disk
View/Edit Disk

If you use the Print File or Print Directory command to print to a networked printer, you won't see the file printed (or queued) until PC Shell is terminated or until you press Ctrl-Alt-[Print Screen].

Tree Display on Networks

If you are connected to a Novell network and you use PC Shell to look at the network server, it will only display directories in the tree window for which you have at least read privileges. This makes PC Shell much easier to use on a network as you only see the directories you use, rather than all the potentially hundreds of directories on the server.

Network Supervisors

If you are setting up PC Tools on a Novell NetWare network, you should make the PC Tools directory path available to all users, and also use a system login script to define the PCTOOLS environment variable for all users. For example:

```
SET PCTOOLS = h:\home\%login_name
```

where the directory below "home" has the same name as a user's login name and the user has full write privileges.

You can use PC Setup to install the PC Tools programs in a write-protected directory on a Novell NetWare or IBM Token-Ring network server. They can then be run from any station on the network which has access to the files on the server. When installing to a network, PC Setup will not make any modifications to an AUTOEXEC.BAT file or install any applications, other than the requested PC Tools applications, into PC Shell's application list.

If you want to make applications available to users, then you can add them to the application list using the Modify Applications List command (see the "Modify Applications List" section in PC Shell). When you do so, you need to have the current directory set to where PC Shell was installed on the network so that the changes will be reflected in the files that will be run from the server. We recommend that Lotus 1-2-3 and dBASE be installed so that these applications can be launched from the respective viewers inside PC Shell.

If PC Tools is installed on a Novell NetWare server by a supervisor and if the supervisor sets up the path and environment variable for all users, PC Setup does not need to be run by each station user.

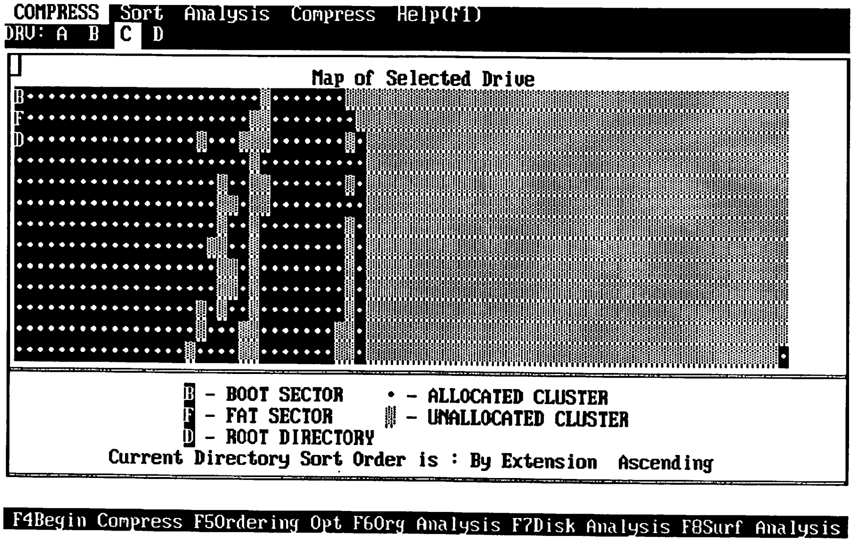
Getting Started

This chapter is an overview of the PC Tools Utilities interface. Although the applications contained in your PC Tools Utilities package perform very different tasks, they have the same user interface and window environment to make them easy to learn and use. It is recommended that you read this chapter thoroughly before continuing.

To use PC Tools Utilities, it is assumed you are familiar with MS-DOS® or IBM PC-DOS, and know about files, file names, and extensions, and how to use the common DOS commands. You need to know how to boot DOS (answer the date and time questions if necessary) to get the DOS prompt (A> or C>). If you need to know more about these, please refer to your Disk Operating System manual.

PC Tools Utilities Screen Layout

PC Tools Utilities uses a pull-down menu interface to make choosing and understanding commands easy. A window environment is used to display the individual applications and makes it possible for a single application to display multiple items (such as pull-down menus, dialog boxes, application windows) at the same time. Even though each application in PC Tools Utilities performs unique functions, the interface is the same. The illustration below shows the user interface with the initial Compress screen.



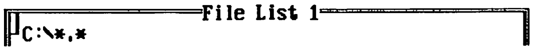
B - BOOT SECTOR
F - FAT SECTOR
D - ROOT DIRECTORY
• - ALLOCATED CLUSTER
▒ - UNALLOCATED CLUSTER
Current Directory Sort Order is : By Extension Ascending

This screen has the following features:

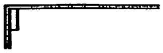
- **Horizontal menu bar:** is the bar across the top of the screen containing the names of pull-down menus available with each application, the program name (for example, Compress) displayed in the upper-left corner, and the on-line Help command for quick answers and guidelines. Selecting Help from the menu bar or pressing F1 provides help that is relevant to the current context of the application.

- **Message bar:** is the bar across the bottom of the screen containing messages to guide you through using the PC Tools Utilities application. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted key or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to begin Compress just press F4 or click anyplace on "F4 Begin Compress" with the mouse; this will begin disk compression. The commands disappear when the bottom line contains help messages.

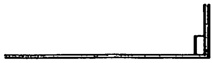
- **Application window:** contains the information for the application you are working on. The windows shown in the following illustrations are from PC Shell. Windows contain the following features:



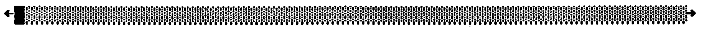
- **Window border:** used to indicate the active window and used with the mouse to move the window. When a window is "active" it means that keystrokes and mouse actions apply to that window. A window has a highlighted double-lined border if it is active and a single-lined border if it is not active.



- **Close box:** used with the mouse to "close" (or put away) a window. This may not be present on all windows.



- **Resize box:** used with the mouse to resize the window. This may not be present in all windows.



- **Scroll bars:** used with the mouse to move, or "scroll" through the information displayed in the window. This may not be present in all windows.

Using the Mouse

PC Tools Utilities fully supports and can be used with either your keyboard or a Microsoft® (or compatible) Mouse.

The pull-down menu approach to choosing and executing commands, along with the overlapping window approach for displaying an application's information makes using PC Tools Utilities much easier with a mouse.

Note: In order to use a mouse, its driver must be installed in your AUTOEXEC.BAT or CONFIG.SYS file. Please see your mouse manual for more information.

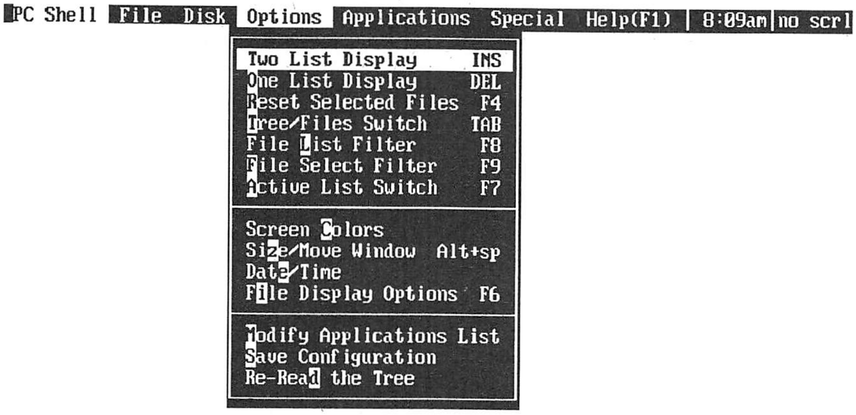
The following table describes basic mouse techniques:

Note: The right mouse button is also supported in PC Tools Utilities programs. If you are left-handed, you can exchange the left mouse button functions for the right by installing a program with the /LE parameter.

To	Do This
Position the Mouse Pointer	Move the mouse; the mouse pointer on the screen mirrors the motion of your hand.
Click	Move the mouse to the desired selection. Press and release the left or right mouse button.
Double-click	Move the mouse to the desired selection. Quickly press and release the left or right mouse button twice.
Drag	Hold down the left or right mouse button and move the mouse. Release the mouse button on the desired selection.
Select	Position the mouse pointer on what you want to select and click the left or right mouse button once.

Choosing Commands

Each application has its own set of commands, organized in pull-down menus on the horizontal menu bar, to perform specific tasks. PC Shell has several commands for setting screen and command options as illustrated below:



To Choose Commands from the Pull-Down Menus:

Commands are organized in the manual in the order they appear on the pull-down menus. The underlined letters of the commands indicate the letters you press to choose the commands. Here is how to choose commands in PC Tools Utilities applications:

Keyboard

1. Press the first letter of the pull-down menu. For example, pressing F will pull down the File menu.
2. Press the highlighted letter of the command. For example, pressing D will display the File Delete dialog box.

Note: Alt or F10 highlights the command names on the horizontal menu bar.

Keyboard arrow keys

1. Press the first letter of a menu name to pull down the menu and display the commands.
2. Use the Up/Down arrow keys to move within a menu, and the Right/Left keys to move across menus. The Home and End keys move to the first and last items of a menu.
3. Press Enter to select the command you want.

Mouse click

1. Position the mouse pointer on the menu name you want and click. This pulls down the menu and displays the available commands.
2. Position the mouse pointer on the command you want and click.

Mouse drag

1. Position the mouse pointer on the menu name you want.
2. Press and hold the mouse button as you move it to the command you want. You are dragging the mouse as you do this.
3. Release the mouse button on the desired command. If you change your mind and don't want to make a menu selection, drag the mouse pointer outside the menu and release the mouse button.

To Close the Menu without Choosing a Command:

If a command has not been selected you can clear the menu. To do this

- Press Esc or F3.

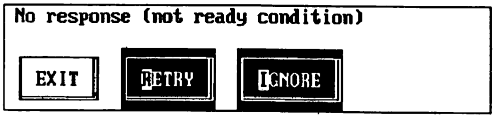
  or
- Click the mouse anywhere outside the pull-down menu.

Using Dialog Boxes

PC Tools Utilities displays dialog boxes when a program requires additional information to carry out a command or needs to give you a message. A dialog box is similar to a window, appearing over the top of any existing windows.

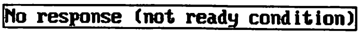
Message Dialog Boxes

Message dialog boxes contain messages and confirmation buttons so you can respond to the message. For example, if you select a drive that does not contain a disk when using PC Shell, you will see the following message box:



No response (not ready condition)

A message dialog box contains the following parts:



No response (not ready condition)

Message: displays what the program needs to tell you.

Confirmation button: provides a way to dismiss the message box after you have read the message.

You must respond to the message by selecting a confirmation button. This closes the message box. To respond to the message perform the following:

Keyboard

- Press Enter to select the highlighted button, or Esc or F3 to dismiss the message box.

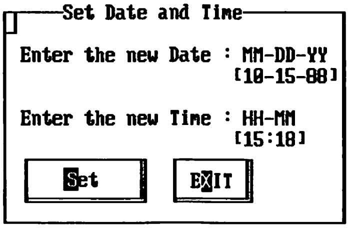
Mouse

- Click on the confirmation button, or click on the close box to dismiss the message box.

If there are multiple options, use the Tab key to highlight a button then press Enter, or press Alt - letter (where letter is the highlighted letter in the button), or just press the highlighted letter to select the button. If you are using a mouse, simply click on the appropriate button.

Command Dialog Boxes

Command dialog boxes require you to provide additional information, or select options, or both. For example, the Set Date and Time dialog box in PC Shell allows you to enter the correct information.

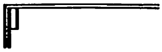


Enter the new Date : MM-DD-YY [10-15-88]

Enter the new Time : HH-MM [15:18]

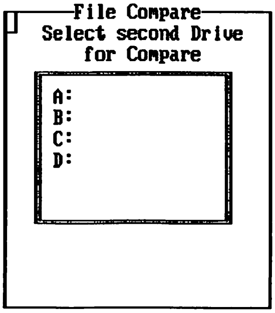
Command buttons: carry out the action according to its name. Dialog boxes frequently have at least two command buttons: "EXIT" and "OK" or the name of the function itself, in this case, "SET."

Exit: ignores any changes to the settings you may have made and closes the dialog box. The Exit button lets you explore a dialog box without committing yourself to any changes.



Close box: used with the mouse to close the dialog box.

In addition, some dialog boxes, like the File Compare dialog box from PC Shell below, contain drive selection boxes.



Select second Drive for Compare

PC Shell remembers the drive selection you make in drive selection dialog boxes so that the next time you use the dialog box, the drive you selected the last time is already highlighted. In dialog boxes with a drive selection box, perform the following:

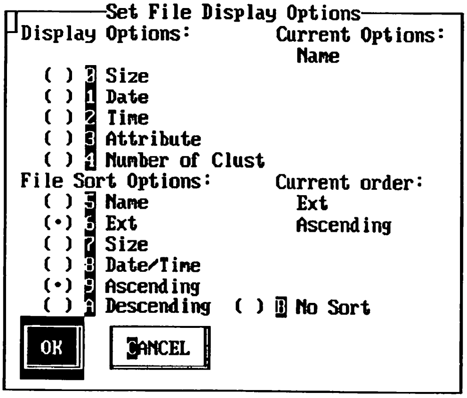
Keyboard

- When the drive selection box is highlighted, press the letter of the drive you want, or use the Up and Down arrow keys to select a drive and then press Enter.
  The command will begin execution as soon as you select a drive.

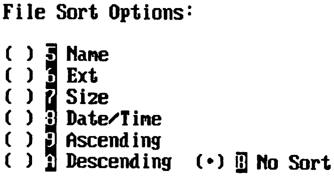
Mouse

- Click on the drive letter with the mouse.
  The command will begin execution as soon as you select a drive.

Other dialog boxes have Option buttons that toggle settings or options on and off. The Set File Display Options dialog box in PC Shell is a good example of this.



```
Set File Display Options
Display Options:          Current Options:
                            Name
   ( ) 0 Size
   ( ) 1 Date
   ( ) 2 Time
   ( ) 3 Attribute
   ( ) 4 Number of Clust
File Sort Options:        Current order:
   ( ) 5 Name               Ext
   (•) 6 Ext                Ascending
   ( ) 7 Size
   ( ) 8 Date/Time
   (•) 9 Ascending
   ( ) A Descending  ( ) B No Sort
```



```
File Sort Options:

( ) 5 Name
( ) 6 Ext
( ) 7 Size
( ) 8 Date/Time
( ) 9 Ascending
( ) A Descending  (•) B No Sort
```

Option buttons: These buttons can be identified by the parenthesis characters ( ). They enable you to pick from a variety of options by selecting one option. Selecting any one option turns off all other options in the same group. (This is similar to the operation of car radio buttons.)

Note: Unlike similar option buttons where you can select only one option among the group, a dialog box with numbers next to the options allows you to select several options by typing additional numbers.

Use the following procedure among a group of option buttons to select an option:

Keyboard

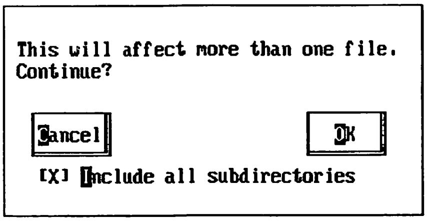
- Type the number corresponding to the option you want to select.
  The selection is indicated by a bullet appearing in the parenthesis (•).
  or

1. Press the Up and Down arrow keys to move within the group of option buttons.
2. When the desired selection is highlighted, press Enter. This switches off any other option buttons within the group.

Mouse

- Click the desired option button in the parenthesis to make the selection. This switches off the other option buttons within the group.

Still other dialog boxes contain option check boxes, like the following dialog box from PC Secure.



This will affect more than one file.
Continue?

[X] Include all subdirectories

Option check boxes: These buttons can be identified by the bracket characters [ ]. You can select multiple items if they appear in a list, and each selected item will have the "X" in the box. You can make selections in Option check boxes with the keyboard or the mouse. Tab to the appropriate option check box and press Enter or click the option check box with the mouse to turn the setting on or off.

Getting Help

HelpPC Tools Utilities provides context sensitive Help, available at all times by simply pressing the F1 key. If you are unsure what a certain pull-down menu item does, use Help to see a short description. For example, in PC Shell when you are using the Search Disk command, pressing F1 provides you with a help message about the how the disk is searched.

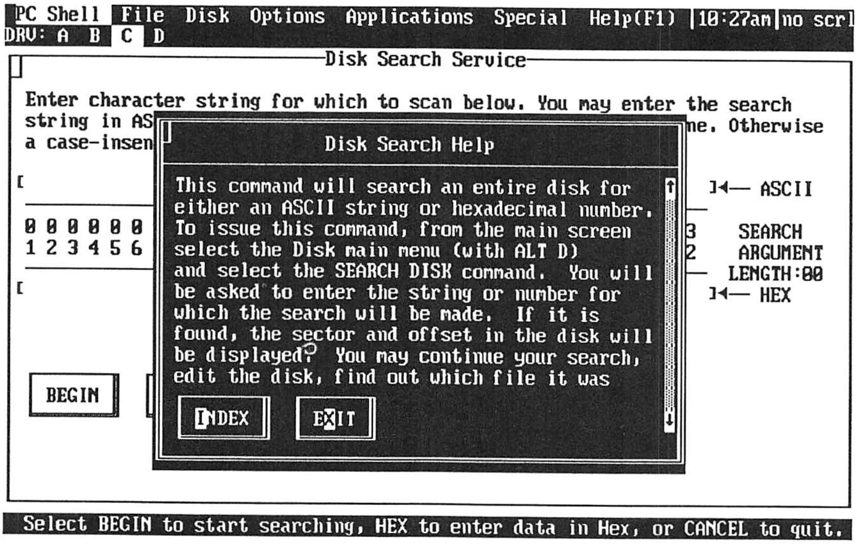
In addition, pressing F2 anywhere in the application displays the Help Index.

To Get Help:

PC Shell has context-sensitive Help available throughout the program. Whenever you press the F1 key, PC Shell will provide you with the appropriate help screen for the task.

1. Press F1 anywhere in an application.
   or
   Select **Help** from the Horizontal Menu bar.

   The correct Help dialog box appears (in this case, for the Search Disk command in PC Shell), giving you information for the function you are using or your current place in the application. If the Help text does not all fit in the dialog box window, you can scroll new text into the box using the keyboard or the mouse.

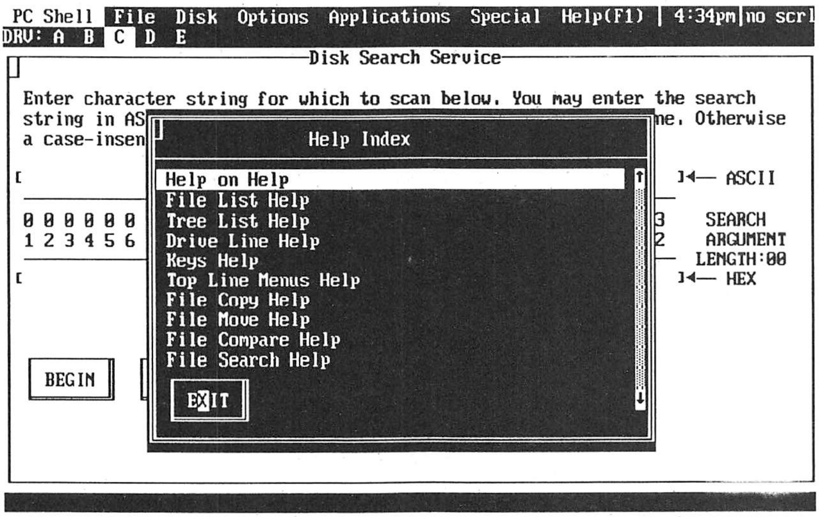


```
Enter character string for which to scan below. You may enter the search
string in AS                                                  ne. Otherwise
a case-insen
```

```
This command will search an entire disk for
either an ASCII string or hexadecimal number.
To issue this command, from the main screen
select the Disk main menu (with ALT D)
and select the SEARCH DISK command.  You will
be asked to enter the string or number for
which the search will be made.  If it is
found, the sector and offset in the disk will
be displayed.  You may continue your search,
edit the disk, find out which file it was
```

```
Select BEGIN to start searching, HEX to enter data in Hex, or CANCEL to quit.
```

2. Select the **Help Index** for information on other features in the application. The Help Index for PC Shell (shown below) appears in the dialog box so you can select an entry.



Enter character string for which to scan below. You may enter the search string in AS ne. Otherwise a case-insen

PC Shell

PC Shell is a powerful utility program combining a window environment for ease of use, with all the critical DOS maintenance commands needed to efficiently manage your system. Copying, moving, deleting, and comparing functions are included, along with the following advanced features:

- Full mouse support throughout PC Shell
- The ability to run applications from within PC Shell
- Advanced recovery of deleted files
- Reorganization of subdirectories (Prune and Graft)
- Mapping of memory-resident programs
- Formatting system and data disks
- Complete file and disk editing
- Standard network-compatible DOS functions supported on Novell's NetWare and IBM Token-Ring

Each networked PC must have its own copy of PC Shell.

Starting PC Shell

PC Shell may be started in two different ways. It may be started in Shell mode or TSR mode. Shell mode is the same as running a standard DOS program. TSR mode is a memory-resident mode that is used to call up PC Shell from within other programs.

We recommend that you install PC Shell resident (rather than Shell mode) as it gives you these advantages:

- PC Shell takes as little as 10K of memory when not in use.
- You can hotkey into PC Shell even when running other programs.
- You can run programs from PC Shell if you were at the DOS prompt prior to hotkeying into PC Shell.

If PC Shell is installed resident, it can also be run in Shell mode just like any other program.

Starting PC Shell in Shell Mode

- Running PC Shell in Shell mode is like running any other DOS program, just type PCSHELL at the DOS prompt. The screen will clear and the main PC Shell screen will come up.

If you are using PC Shell in the Shell mode, then skip ahead to the "PC Shell Parameters" section.

Starting PC Shell in TSR Mode

If you want to be able to enter PC Shell from PC Tools Desktop (which is handy if you want to delete or copy files), then PC Shell needs to be installed resident before PC Tools Desktop. We suggest that you use PC Setup to install your PC Tools Deluxe files to your hard disk. It places the files in your AUTOEXEC.BAT file in the suggested order.

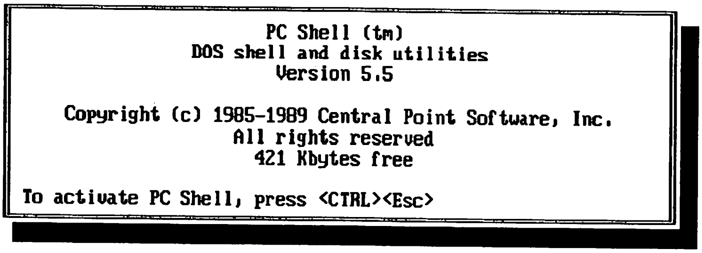
Note: If you hotkey into PC Shell, the screen is cleared prior to displaying the PC Shell windows. If you enter PC Shell from the Desktop menu, the screen will not be cleared, leaving your underlying Desktop windows visible. This has the effect of making PC Shell look and work like part of Desktop.

To run PC Shell in TSR mode, type the following at the DOS prompt:

```
PCSHELL /R
```

This starts the memory-resident version.

Wait a moment for PC Shell to load into memory, then the following is displayed on your screen:



```
                         PC Shell (tm)
                 DOS shell and disk utilities
                          Version 5.5

      Copyright (c) 1985-1989 Central Point Software, Inc.
                      All rights reserved
                       421 Kbytes free

To activate PC Shell, press <CTRL><Esc>
```

The PC Shell sign-on screen displays the following information:

- The program name and version number
- The current memory available to other programs
- The hotkeys used to call up the program

Using the Hotkey

A "hotkey" is used to call up a memory-resident program. You may press the default hotkey (Ctrl - Esc) to activate PC Shell at any time, after it is loaded as a memory-resident program. The hotkey in PC Shell is user definable, so you may choose another hotkey to activate PC Shell. Use the /Fn parameter to define a hotkey. (This procedure is discussed in detail in the PC Shell Parameters section of this chapter.) When you are done using Shell and want to return to your underlying application, just press the hotkey again. You do not have to press Esc or Exit from PC Shell. Using the hotkey is much faster.

Running PC Shell memory resident will allow you to bring it up while other programs are running by pressing the Ctrl-Esc hotkey. For example, if you were working in your word processor and wanted to save a file to a unformatted floppy disk, you could hotkey into PC Shell and format the disk, copy the file, then hotkey out of PC Shell, and continue where you left off.

PC Shell requires as little as 10k of memory when inactive. Once the program is activated by the hotkey, it saves a portion of your computer's memory to disk. It then brings in the rest of PC Shell and executes. When you put PC Shell away, it restores your computer's memory to its original state and returns control to the underlying program.

Using Expanded Memory

Shell uses EMS when it is resident and active only. When you hotkey into PC Shell, it will automatically load the PCSHELL.THM overlay file into expanded memory (LIM compatible), if available, to hold the image of the underlying application. If EMS memory is insufficient or non-existent, then the image is placed in PCSHELL.THM, and this file is placed wherever PCSHELL.OVL is located. The expanded memory is freed when you hotkey out of PC Shell. PC Shell needs approximately 200 kilobytes of expanded memory to run. You also must have your expanded memory driver installed in your CONFIG.SYS file before loading PC Shell.

The other PC Shell overlay files do not use expanded memory because these files are permanently allocated when PC Shell is installed and would require permanent use of expanded memory while PC Shell is installed.

Using Floppy Disk Systems

Although PC Shell requires under 10K of memory when inactive, the trade off is that PC Shell must use several hundred kilobytes of additional disk space to hold its program and overlay files. Running PC Shell memory resident from a floppy disk is only possible with 5.25 inch 1.2 Meg or 3.5 inch 1.44 Meg disks. Smaller disks do not have the capacity to hold all of the files PC Shell needs when running memory resident.

Removing PC Shell from Memory

Once PC Shell has been run as a memory-resident application, it can be removed from memory with the following command:

```
KILL
```

This command also removes PC Tools Desktop (plus BACKTALK) from memory if it was the last memory-resident program you loaded.

PC Shell Files

PC Shell uses several files so you can have the flexibility of running it in resident mode or Shell mode, or in both modes at the same time, and still maintain program compatibility:

Files used in both Shell and resident modes

PCSHELL.EXE	PC Shell Program
PCSHELL.HLP	Help File
PCSHELL.CFG	Configuration (saves changes in screen size, colors, customized menus, etc.)
PCSHELL.OVL	Program overlay

Files used in resident mode only

PCSHELL.IMG	Program image (created by PC Shell)
PCSHELL.THM	Swapped memory area (created by PC Shell)
PCRUN.COM	Runs programs in resident mode

Files used in Shell mode only

PCSHELL.IMX	Program image (created by PC Shell)
PCSHELL.TRE	Tree List storage (created by PC Shell)

Note: The PCSHELL.THM file will be created and deleted on the disk when hotkeying in and out of PC Shell. The PCSHELL.CFG file saves any changes you make to the default PC Shell settings. For example, if you add programs to the Applications menu, PC Shell saves this configuration in the .CFG file, so don't delete the PCSHELL.CFG file or you will lose your special settings. See the Save Configuration command on the Options menu for more information.

When you execute PC Shell, it looks for its files in the following order:

- If you are using DOS 3.0 or higher, it looks in the directory from which PC Shell was executed; then
- it scans the directories in the path statement. If not found
- it looks in the PCTOOLS subdirectory. If not found
- it looks in the root directory.

PC Shell Parameters

You can set some of the following settings when you run PC Setup; however, if you choose not to run PC Setup, these parameters may be added to the command line when executing PC Shell from the DOS prompt.

/BW

Starts PC Shell in black and white mode. This will result in a better screen display when using a color card with a monochrome monitor. Can be used in either Shell or resident mode.

/DQ

When PC Shell is hotkeyed into, it must save the memory being used by the currently running program in a disk file before it can load its program file into memory. This naturally takes time. To make Shell load faster, it will not save memory when it is hotkeyed into from the DOS prompt because there is no program running.

If you experience any problems when you hotkey into PC Shell from the DOS prompt, use the /DQ parameter when you install PC Shell to disable the quickload capability at the DOS prompt.

/FF

Disables screen "snow" suppression on CGA monitors. Normally, PC Shell suppresses video "snow" on CGA monitors so that your video display is sharper (we emulate EGA and VGA video). This may slow scrolling on some monitors. If you have a CGA monitor and don't mind minor flickering, or "snow" on your screen, install PC Shell with the /FF parameter.

/Fn

Changes the default hotkey from Ctrl - Esc to Ctrl - Fn (where "n" is a selected function key, F1 through F10). This is useful if another program is already using the Ctrl - Esc hotkey sequence. This parameter is only used in resident mode.

/LE

Exchanges the left and right mouse button functions to accommodate left-handed people.

/IM

Disables the mouse when using PC Shell. Use this parameter if you have an old Microsoft Mouse driver or are experiencing problems with a mouse supported application, after hotkeying out of PC Shell. Due to a lack of support in some older mouse drivers, memory-resident programs may have no way of knowing how the mouse driver was setup for a previous application. Hotkeying into and then out of PC Shell may cause the loss of mouse support in the current application. By using the /IM parameter, the mouse will be disabled in PC Shell, but keyboard functions will continue to operate normally. The mouse will not be affected in your underlying program.

Note: If you have problems with the mouse after entering PC Shell, it is most likely due to using an older-style driver. You can use the /IM parameter, but we recommend that you contact your mouse manufacturer to get an upgrade.

/IN

If you have a Hercules InColor card and want to run PC Shell resident and in color, use the /IN parameter. If you do not use the /IN parameter, Shell will come up in black and white mode. When running Shell in non-resident mode with an InColor card, Shell will come up with its normal colors.

/Od

Selects a different drive to contain the PC Shell overlay files (PCSHELL.OVL, PCSHELL.IMG, PCSHELL.THM). The PC Shell overlay files are always on disk, and normally, PC Shell uses the default drive to build its overlay files. This can be changed, forcing the program to build the files on another drive, such as a RAM disk. When running Shell resident, the image file (PCSHELL.IMG) is created and deleted in the same place as the other overlay files. Building the overlay files on a RAM disk may help speed up program execution.

There must be enough space available on the RAM disk to hold the overlay files, or PC Shell will not run. The required space is dependent on the/R parameter, as shown in the table below. The size of the PCSHELL.THM file is dependent upon the type of display you are using. The sizes in the table reflect an EGA display. If you are using a VGA display, the file size will be approximately 20 kilobytes larger.

		File Sizes in Bytes		
PC Shell	/RT	/RS	/RM	/RL
PCSHELL.OVL	225,000	225,000	225,000	225,000
PCSHELL.IMG	176,000	104,000	78,000	0
PCSHELL.THM*	6,000	6,000	6,000	4,000
PC SHELL.THM**	180,000	108,000	82,000	4,000
Totals*	407,000	335,000	309,000	229,000
Totals**	587,000	437,000	385,000	229,000

* Reflects file sizes when hotkeying into PC Shell from the DOS prompt.
** Reflects file sizes when hotkeying into PC Shell while running another program.

If you also have expanded memory, PC Shell will automatically load the PCSHELL.THM file to it, even if you have used the /O parameter.

/350

Displays in 350 line resolution if you have a VGA display. This will make the background screen and the scroll bars in PC Shell continuous, but it may have the effect of reducing the size of the screen on some VGA adapters. This parameter also works with PC Secure.

/R

The /R parameter designates the amount of "resident" memory PC Shell uses and has the following options (representing four sizes):

/RTINY or /RT or /R	approximately 9K of resident memory
/RSMALL or /RS	approximately 70K of resident memory
/RMEDIUM or /RM	approximately 90K of resident memory
/RLARGE or /RL	approximately 170K of resident memory

The resident memory size is the amount of memory PC Shell uses when it is not active. The reason you might want to change the /R parameter from the default 9K setting is to make PC Shell faster: both when hotkeying in and out and when running other programs from Shell. The trade off in using a small amount of memory is speed: the lower the /R number, the less memory must be swapped in and out. PC Shell can achieve such small numbers because it contains a "virtual memory manager" that moves memory to disk when it is not needed. The speed of memory swapping depends upon the speed of your hard drive. If you have a fast hard drive, the smaller numbers are recommended. If you have a slow hard drive, you may want to use one of the higher numbers.

The advantage of memory swapping is that you can free up almost all of PC Shell's memory for other programs; the disadvantage is that there is a slight delay when hotkeying into and out of, or running programs from PC Shell. We have provided these four settings so that you can pick the option that works best on your computer to optimize response time and use memory most efficiently.

Note: If you have EMS memory, PC Shell will use it instead of your hard disk. You can use the /RT parameter and have the best of both worlds: speed and maximum conventional memory.

/A (Active memory size)

This parameter determines the amount of memory PC Shell uses while it is active in resident mode (when you have hotkeyed into it). The minimum /A option is 200K. The maximum /A option is (approximately) the total amount of memory in your computer minus 200K. (This amount depends upon what other TSRs you use, what version of DOS, and so on.)

The format for this parameter is

```
/Annn
```

where nnn is a number greater than 200K. For example,

```
/A240
```

will allocate 240K for PCSHELL when it is active.

The default setting of the /A parameter (the setting used if you don't increase it) is 200K. The only reason to change it is to give more room to PC Shell when it is active. For example, copying a disk on a single drive will take fewer swaps. We recommend that you use the default setting, unless you will be using PC Shell for many single floppy disk operations.

In order to change the /A setting, you need to unload PC Shell from memory, then re-install it with the /A setting you want.

Note: If you use /RL with /A, the amount of resident memory used by PC Shell when it is non-active will equal the /A setting.

Insufficient Memory

While using PC Shell, if you receive a message indicating insufficient memory, exit PC Shell, remove the program from memory using the KILL command and reinstall using the /A parameter with a larger number. You can also add the /A parameter to PC Shell in your AUTOEXEC.BAT file. If you currently do not use the /A parameter, add it to the command line using a number greater than 200K (the default setting).

/TRn

This parameter tells PC Shell to do a Tree Rebuild every "n" days. If "n" is 0, then PC Shell will rebuild the tree display every time it is run in Shell mode; if "n" is 1, then it will rebuild the tree list every day, or as soon thereafter as PC Shell is run; if "n" is 7, then it will rebuild the tree list display every week, etc. The default setting is 1.

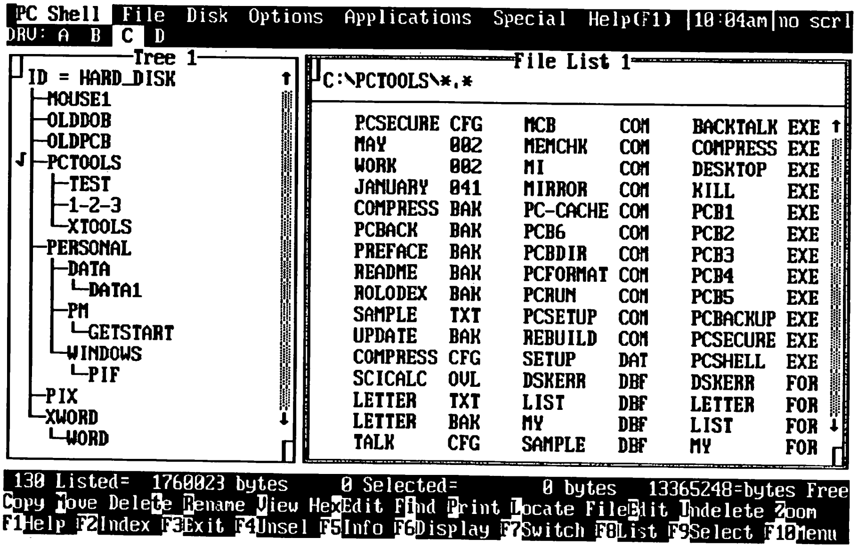
Important

Every time you run PC Shell, in resident or Shell mode, the disk information is reread and the file list is updated to reflect any changes that were made in the file list since the last time PC Shell was used. This process is relatively fast.

In resident mode, PC Shell will reread the disk information and update the tree display if directories have been added or deleted since the last time you hotkeyed into PC Shell. There are circumstances when changes can be made to subdirectories when not in PC Shell which PC Shell cannot detect, such as renaming a subdirectory. In these cases, pressing Ctrl - Drive letter will force PC Shell to update the tree display. The process of rereading the disk information and rebuilding the tree display takes enough time that PC Shell only does it when it knows that a change has been made, or you force it to.

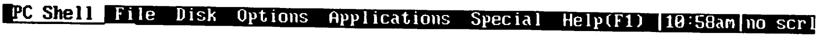
In Shell mode, the first time that PC Shell is run the tree display is read and saved in a file named PCSHELL.TRE for reuse the next time it is run. Like in resident mode, this makes Shell come up faster. In Shell mode, PC Shell has no way of knowing if changes have been made to subdirectories when PC Shell is not running. So the next time that PC Shell is run, the tree display will be the same as it was the last time. You can press Ctrl - Drive letter to force PC Shell to reread the disk information and rebuild the tree.

The PC Shell Main Screen



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |10:04am|no scrl
DRV: A  B  C  D
┌──────────────Tree 1──────────┐ ┌─────────────────File List 1─────────────────────┐
 ID = HARD_DISK               ↑   C:\PCTOOLS\*.*
  ├MOUSE1
  ├OLDDOB                          PCSECURE CFG    MCB      COM    BACKTALK EXE ↑
  ├OLDPCB                          MAY      002    MEMCHK   COM    COMPRESS EXE
 ↲├PCTOOLS                         WORK     002    MI       COM    DESKTOP  EXE
  │ ├TEST                          JANUARY  041    MIRROR   COM    KILL     EXE
  │ ├1-2-3                         COMPRESS BAK    PC-CACHE COM    PCB1     EXE
  │ └XTOOLS                        PCBACK   BAK    PCB6     COM    PCB2     EXE
  ├PERSONAL                        PREFACE  BAK    PCBDIR   COM    PCB3     EXE
  │ ├DATA                          README   BAK    PCFORMAT COM    PCB4     EXE
  │ │ └DATA1                       ROLODEX  BAK    PCRUN    COM    PCB5     EXE
  │ ├PM                            SAMPLE   TXT    PCSETUP  COM    PCBACKUP EXE
  │ │ └GETSTART                    UPDATE   BAK    REBUILD  COM    PCSECURE EXE
  │ └WINDOWS                       COMPRESS CFG    SETUP    DAT    PCSHELL  EXE
  │   └PIF                         SCICALC  OVL    DSKERR   DBF    DSKERR   FOR
  ├PIX                             LETTER   TXT    LIST     DBF    LETTER   FOR
  └XWORD                      ↓    LETTER   BAK    MY       DBF    LIST     FOR ↓
    └WORD                          TALK     CFG    SAMPLE   DBF    MY       FOR
 130 Listed=  1760023 bytes     0 Selected=        0 bytes   13365248=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

The PC Shell screen contains the following parts:



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |10:58am|no scrl
```

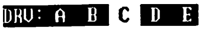
- **Horizontal Menu Bar:** is located across the top of the screen. The horizontal menu bar displays the names of the available pull-down menus:

  File: commands for file functions.
  Disk: commands for disk functions.
  Options: PC Shell configuration options.
  Applications: executable program list.
  Special: undelete, memory and disk maps, etc.
  Help: help for commands.

- **Program Name:** PC Shell, located at the top left of the horizontal menu bar.

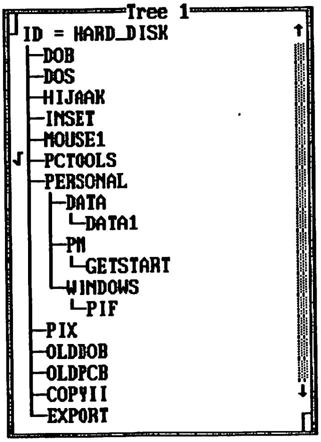
- **Time:** is located in the top right corner of the horizontal menu bar. Time displays current system time.

- **Scrl:** is located next to Time. Scrl lets you know if the scroll lock key is on. If scroll lock is on, then the File List scrolls, and the cursor will usually stay in the center of the window. If scroll lock is off, then the cursor moves freely in the File List window.



```
DRV: A B C D E
```

- **Drive Command Line:** is displayed directly under the horizontal menu bar. The drive line displays the available drives in the system with the current drive highlighted. The number of drives displayed will be the maximum allowed by DOS unless the LASTDRIVE command is used in the CONFIG.SYS file.

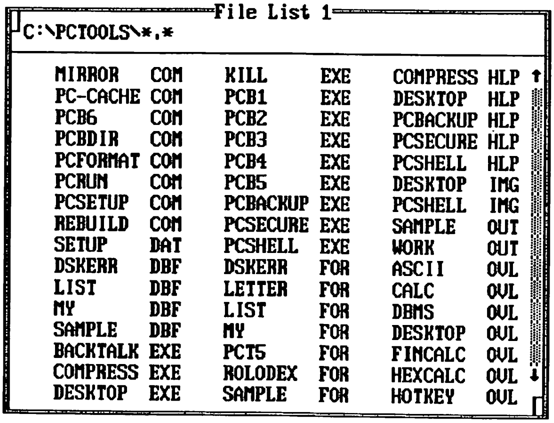


```
Tree 1
ID = HARD_DISK
 ├DOB
 ├DOS
 ├HIJAAK
 ├INSET
 ├MOUSE1
√├PCTOOLS
 ├PERSONAL
 │ ├DATA
 │ │└DATA1
 │ ├PM
 │ │└GETSTART
 │ └WINDOWS
 │   └PIF
 ├PIX
 ├OLDDOB
 ├OLDPCB
 ├COPYII
 └EXPORT
```

- **Tree List Window:** is the window displayed on the left side of the screen. The Tree List displays a graphic tree of the subdirectories on the selected drive. The current DOS directory is marked with a check mark and is highlighted. A vertical scroll bar is located on the right side of the window.

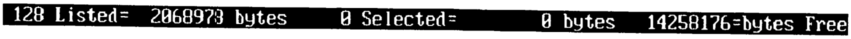
Tree Display on Networks

If you are connected to a Novell network and you use PC Shell to look at the network server, it will only display directories in the tree window for which you have at least read privileges. This makes PC Shell much easier to use on a network as you only see the directories you use, rather than all the potentially hundreds of directories on the server.



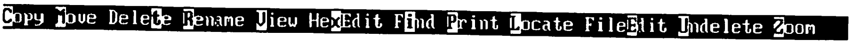
```
File List 1
C:\PCTOOLS\*.*

MIRROR   COM   KILL      EXE   COMPRESS HLP
PC-CACHE COM   PCB1      EXE   DESKTOP  HLP
PCB6     COM   PCB2      EXE   PCBACKUP HLP
PCBDIR   COM   PCB3      EXE   PCSECURE HLP
PCFORMAT COM   PCB4      EXE   PCSHELL  HLP
PCRUN    COM   PCB5      EXE   DESKTOP  IMG
PCSETUP  COM   PCBACKUP  EXE   PCSHELL  IMG
REBUILD  COM   PCSECURE  EXE   SAMPLE   OUT
SETUP    DAT   PCSHELL   EXE   WORK     OUT
DSKERR   DBF   DSKERR    FOR   ASCII    OVL
LIST     DBF   LETTER    FOR   CALC     OVL
MY       DBF   LIST      FOR   DBMS     OVL
SAMPLE   DBF   MY        FOR   DESKTOP  OVL
BACKTALK EXE   PCT5      FOR   FINCALC  OVL
COMPRESS EXE   ROLODEX   FOR   HEXCALC  OVL
DESKTOP  EXE   SAMPLE    FOR   HOTKEY   OVL
```

- **File List Window:** is the window displayed on the right side of the screen. The File List displays the files in the current directory, selected in the Tree List display. A vertical scroll bar is located on the right side of the window.



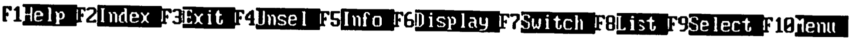
```
128 Listed=  2068978 bytes     0 Selected=          0 bytes   14258176=bytes Free
```

- **Status Line:** is below the Tree List and File List windows. The Status Line shows the number of files in the directory and how many bytes they comprise, the number of files selected and how many bytes they comprise, and the number of unallocated bytes on the disk. When you hold down the right mouse button and drag the mouse over files, you will see the Status Line change to show the highlighted file's name, size, date and time last modified, and attributes.



```
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
```

- **Command Bar:** is the bar above the Message Bar on the bottom line. It contains commonly used commands for quick and easy access. The same commands also appear on the pull-down menus. The commands can be selected by pressing the highlighted letter or clicking on them with the mouse. For example, press "C" to copy files or click on "Copy."



```
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

- **Message bar:** is located at the bottom of the screen. It is used to provide additional information, keystroke options, and help suggestions. This line will change constantly to reflect where you are in the PC Shell program. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted key(s) or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to unselect all previously selected files just press F4 or click anyplace on "F4 Unsel" with the mouse. The commands disappear when the bottom line contains help messages.

Scrolling in Windows

Sometimes the entire tree or all of the files cannot be displayed in the available window space. Scrolling allows you to move through and view the entire tree or all of the files if they do not fit in the window.

You can use the keyboard or the mouse to scroll in the Tree List and File List windows.

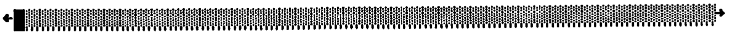
To Scroll in a Window:

Keyboard

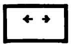
- Use the Up and Down arrow keys to scroll up or down one line at a time.
- Use the PgUp or PgDn key to move up or down one window full at a time or the Home or End keys to go to the beginning or end.

Mouse

- Press the right mouse button and drag the mouse. As the mouse moves, the highlight bar moves. Moving the mouse to the top of a window scrolls it up, and moving the mouse to the bottom of the window scrolls it down.
  or
- Use the scroll bars:



Scroll bars: used to scroll in a window by using the following:



Scroll arrows: clicking on a scroll arrow moves the display incrementally. Clicking and holding down on the scroll arrow scrolls the display continuously.

Scroll box: used to scroll to a specific part of the application. For example, dragging the scroll box to the middle of the scroll bar displays the middle of the application's data.

- Click on the scroll arrow to scroll incrementally a few lines at a time.
or
- Click and hold the left mouse button on the scroll arrow to scroll continuously.
or
- Click in the scroll bar to indicate the approximate place in the list you want to display. For example, point and click half way down the scroll bar to view the middle section of the list. Using the scroll bar enables you to position more precisely.
or
- Drag the scroll box to the approximate place in the list you want to display.

Using the Right Mouse Button

In addition to the basic mouse techniques, PC Shell supports the right mouse button as follows:

To	Do This
Select files	Press the right mouse button and position the highlight bar over the first file you want to select, then press and hold down the left mouse button. Drag the highlight bar over any additional files you want to select. As the files are selected they are highlighted and numbered. Release both mouse buttons.
Unselect files	Press the right mouse button and position the highlight bar over the first file you want to unselect, then press and hold down the left mouse button. Drag the highlight bar over any additional files you want to unselect. As the files are unselected the highlight and numbers are removed. Release both mouse buttons.
Scroll through the File or Tree List	Position the right mouse button in the window you want to scroll and drag the mouse to the top or bottom of the File or Tree List display.

Note: If you are left-handed, you can exchange the functions of the left and right mouse buttons by starting PC Shell with the /LE parameter.

Selecting in PC Shell

Selecting Menus

1. Press the first letter of the pull-down menu. For example, pressing F will pull down the File menu.
2. Press the highlighted letter of the command. For example, pressing D will display the File Delete dialog box.

Selecting Drives

On the Drive Command Line, click on the desired drive letter with a mouse. You may also press Ctrl - Drive Letter to select a drive using the keyboard. For example, Ctrl - A selects drive A.

Selecting Subdirectories

To select a subdirectory, use either the Up, Down, Left, or Right arrow keys, or the PgUp, PgDn, Home, or End keys to highlight the selected subdirectory in the active Tree List window. The mouse can also be used to click on a desired subdirectory.

Selecting Files

Perform the following tasks to select files to Copy, Move, Compare, etc.

Keyboard

1. Press the Up, Down, Left, or Right arrow keys, or the PgUp, PgDn, Home, or End keys to highlight the desired file in the File List window.
2. Press the Enter key to select the file for action.
   Selected files will be numbered in the order of selection.
   or

- Type the number of your selection and press Enter.
  Shell automatically renumbers and reorders files accordingly.

Left Mouse

- Position the highlight bar on a file and click the left mouse button.

Right Mouse

- Press the right mouse button and position the highlight bar over the first file you want to select, then press and hold down the left mouse button. Drag the highlight bar over any additional files you want to select. As the files are selected they are highlighted and numbered. Release both mouse buttons.

Note: To see how many files you have selected and how many total bytes they comprise, see the information on the Status Line.

Unselecting Files

Keyboard

1. Press the Up, Down, Left, or Right arrow keys, or the PgUp, PgDn, Home, or End keys to move the highlight bar to the selected file.
2. Press the Enter key to unselect the file.

   or

- Press the **F4** key to unselect *all* previously selected files.

Mouse

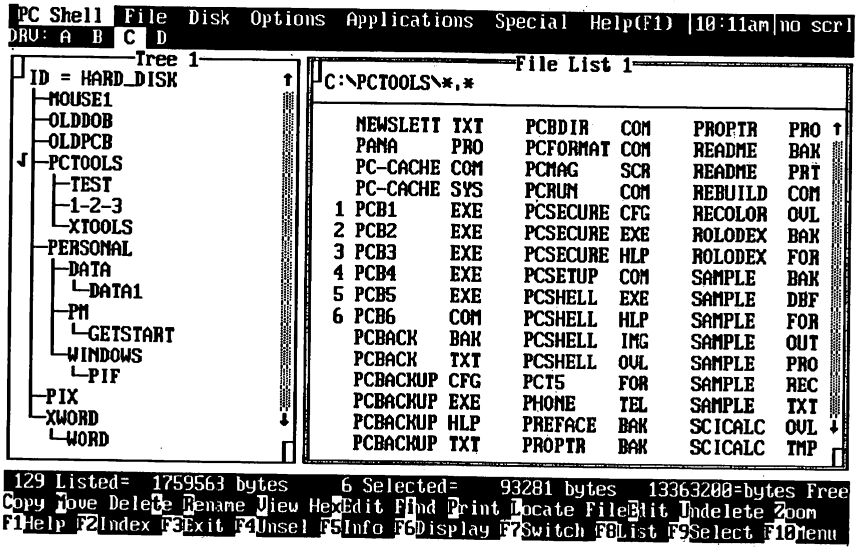
- Click on a selected file with the left mouse button to unselect the file.

Right Mouse

- Press the right mouse button and position the highlight bar over the first file you want to unselect, then press and hold down the left mouse button. Drag the highlight bar over any additional files you want to unselect. As the files are unselected the highlight and numbers are removed. Release both mouse buttons.

Note: See the Getting Started chapter for more information on selecting menus, choosing commands, and using the mouse.

The following screen shows selected files in PC Shell.



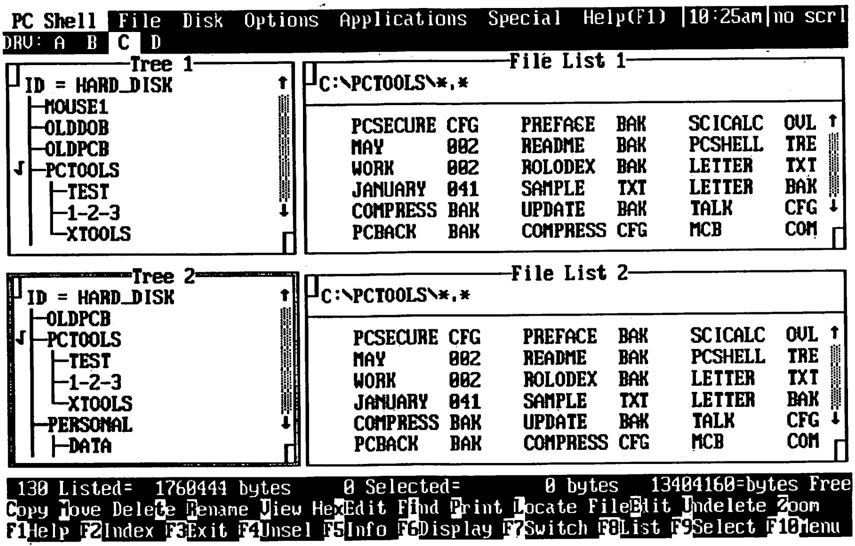
```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |10:11am|no scrl
DRV: A  B  C  D
            Tree 1                          File List 1
ID = HARD_DISK               C:\PCTOOLS\*.*
├MOUSE1
├OLDDOB                         NEWSLETT TXT   PCBDIR   COM   PROPTR  PRO
├OLDPCB                         PANA     PRO   PCFORMAT COM   README  BAK
├PCTOOLS                        PC-CACHE COM   PCMAG    SCR   README  PRT
│├TEST                          PC-CACHE SYS   PCRUN    COM   REBUILD COM
│├1-2-3                       1 PCB1     EXE   PCSECURE CFG   RECOLOR OVL
│└XTOOLS                      2 PCB2     EXE   PCSECURE EXE   ROLODEX BAK
├PERSONAL                     3 PCB3     EXE   PCSECURE HLP   ROLODEX FOR
│├DATA                        4 PCB4     EXE   PCSETUP  COM   SAMPLE  BAK
││└DATA1                      5 PCB5     EXE   PCSHELL  EXE   SAMPLE  DBF
│├PM                          6 PCB6     COM   PCSHELL  HLP   SAMPLE  FOR
││└GETSTART                     PCBACK   BAK   PCSHELL  IMG   SAMPLE  OUT
│└WINDOWS                       PCBACK   TXT   PCSHELL  OVL   SAMPLE  PRO
│ └PIF                          PCBACKUP CFG   PCT5     FOR   SAMPLE  REC
├PIX                            PCBACKUP EXE   PHONE    TEL   SAMPLE  TXT
└XWORD                          PCBACKUP HLP   PREFACE  BAK   SCICALC OVL
 └WORD                          PCBACKUP TXT   PROPTR   BAK   SCICALC TMP
 129 Listed=  1759563 bytes    6 Selected=    93281 bytes   13363200=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

Two List Display

The Two List Display command from the Options pull-down menu opens a second set of Tree and File List windows for another drive or subdirectory. This is helpful when copying, moving or comparing files from one drive or subdirectory to another. (See the Copy command in the File Menu section of this manual for a detailed procedure on "dragging" files from one directory to another using the Two List Display.)

To Open a Second Set of Windows:

1. Choose either the **Two List Display** from the Options pull-down menu or press the Insert key. PC Shell opens a second set of display windows.



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |10:25am|no scrl
DRV: A  B  C  D
              Tree 1                                  File List 1
 ID = HARD_DISK                    C:\PCTOOLS\*.*
  ├MOUSE1
  ├OLDDOB                            PCSECURE CFG   PREFACE  BAK   SCICALC  OVL
  ├OLDPCB                            MAY      002   README   BAK   PCSHELL  TRE
  ├PCTOOLS                           WORK     002   ROLODEX  BAK   LETTER   TXT
  │ ├TEST                            JANUARY  041   SAMPLE   TXT   LETTER   BAK
  │ ├1-2-3                           COMPRESS BAK   UPDATE   BAK   TALK     CFG
  │ └XTOOLS                          PCBACK   BAK   COMPRESS CFG   MCB      COM

              Tree 2                                  File List 2
 ID = HARD_DISK                    C:\PCTOOLS\*.*
  ├OLDPCB
  ├PCTOOLS                           PCSECURE CFG   PREFACE  BAK   SCICALC  OVL
  │ ├TEST                            MAY      002   README   BAK   PCSHELL  TRE
  │ ├1-2-3                           WORK     002   ROLODEX  BAK   LETTER   TXT
  │ └XTOOLS                          JANUARY  041   SAMPLE   TXT   LETTER   BAK
  ├PERSONAL                          COMPRESS BAK   UPDATE   BAK   TALK     CFG
  │ ├DATA                            PCBACK   BAK   COMPRESS CFG   MCB      COM
 130 Listed=  1760444 bytes     0 Selected=       0 bytes   13404160=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

2. From either of the Tree windows, select the second subdirectory that you want to display, or from the Drive Command Line, select a new drive letter. PC Shell displays Tree and File List windows for the new drive or subdirectory.

Short Cut: To quickly open a second set of windows and read another drive, press Ctrl-Alt-Drive letter (where the letter is the other drive you want to read.)

Note: To save the Two List Display settings for subsequent PC Shell sessions, use the Save Configuration command in the Options pull-down menu.

One List Display

The One List Display command closes the second set of Tree and File List windows and returns you to the single list window display.

To Remove the Second Set of Windows:

- Choose either the **One List Display** from the Options pull-down menu or press the Delete key. The second set of windows will disappear.

  Note: To save the One List Display for subsequent PC Shell sessions, use the Save Configuration command in the Options pull-down menu.

An Example

Locating, Viewing, Launching Files

This section provides an overview of the file location, search, view, and application launch capabilities in PC Shell, which can be combined to provide a powerful yet easy way to manage your files.

Each of these commands is explained in more detail later in the manual; however, this overview is provided to demonstrate how these commands can be used together.

With the Locate command, you can find groups of files, such as all of your word processor files or all of your database files no matter where they are on your hard disk, and have them displayed in a window.

With the Find command, you can search a group of files for a particular text string. Once a file has been found which contains the text string, you have several options: You can view the file, launch the application and load the file, print it, or just mark it and keep looking through the rest of your files so you can develop a complete list of all files that contain this text.

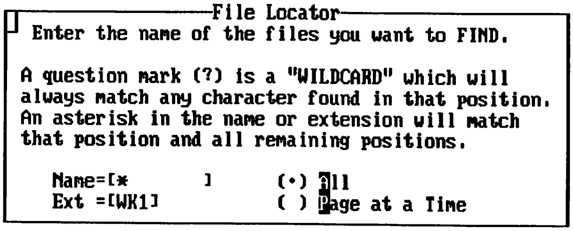
You can even use the Locate and Find commands together to produce a list of files selected by both file type and content. Once you have a window that contains the files you want to work with, all the PC Shell file commands (such as Copy, Move, Delete, View, etc.) are available for your use.

The View command is especially helpful. Its dBASE and Lotus 1-2-3 viewers provide you with the ability to look at a file in its native mode. You can then launch dBASE or Lotus from its respective viewer and return to PC Shell when you are finished.

Let's say you have many Lotus 1-2-3 files, and you want to make some changes to the file containing the advertising budget for the Skippies Dog Food account. You have more than one spreadsheet file for this account, and you don't remember which file contains the advertising budget. You do know, however, that the word "Skippies" appears in the file you want to make changes to. Here's how you can use PC Shell to find the file you want and make the changes.

The first step is to find all the Lotus 1-2-3 file on your disk:

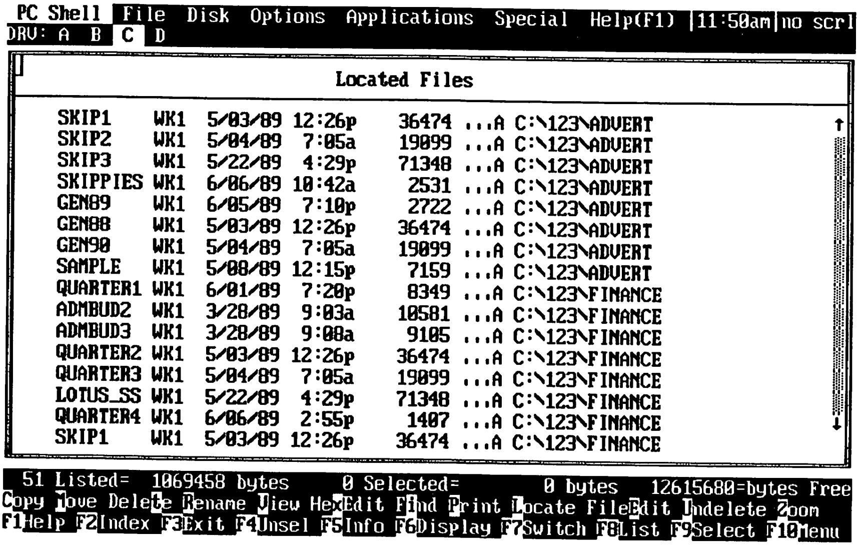
1. Press L to choose the **Locate** command. The File Locator dialog box appears:



```
                  File Locator
 Enter the name of the files you want to FIND.

A question mark (?) is a "WILDCARD" which will
always match any character found in that position.
An asterisk in the name or extension will match
that position and all remaining positions.

   Name=[*        ]      (•) All
   Ext =[WK1]            ( ) Page at a Time
```

- Press Enter to accept the default asterisk (*) as the file name.
- Enter WK1 for the extension. (Since we are looking for Lotus 1-2-3 spreadsheet files, we enter .WK1, the file extension Lotus 1-2-3 uses.)
- Since the "All" option is already selected, press Enter to start Locate.

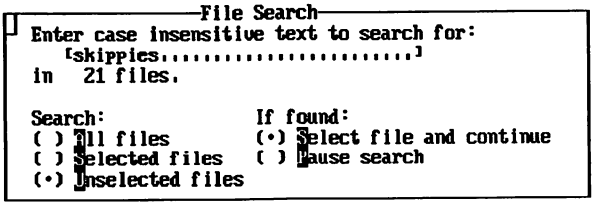
All of the Lotus 1-2-3 files (*.WK1) on your disk will be found and displayed in the Locate window.



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |11:50am|no scrl
DRV: A  B  C  D
                              Located Files

    SKIP1     WK1  5/03/89 12:26p    36474 ...A C:\123\ADVERT                ↑
    SKIP2     WK1  5/04/89  7:05a    19099 ...A C:\123\ADVERT
    SKIP3     WK1  5/22/89  4:29p    71348 ...A C:\123\ADVERT
    SKIPPIES  WK1  6/06/89 10:42a     2531 ...A C:\123\ADVERT
    GEN89     WK1  6/05/89  7:10p     2722 ...A C:\123\ADVERT
    GEN88     WK1  5/03/89 12:26p    36474 ...A C:\123\ADVERT
    GEN90     WK1  5/04/89  7:05a    19099 ...A C:\123\ADVERT
    SAMPLE    WK1  5/08/89 12:15p     7159 ...A C:\123\ADVERT
    QUARTER1  WK1  6/01/89  7:20p     8349 ...A C:\123\FINANCE
    ADMBUD2   WK1  3/28/89  9:03a    10581 ...A C:\123\FINANCE
    ADMBUD3   WK1  3/28/89  9:08a     9105 ...A C:\123\FINANCE
    QUARTER2  WK1  5/03/89 12:26p    36474 ...A C:\123\FINANCE
    QUARTER3  WK1  5/04/89  7:05a    19099 ...A C:\123\FINANCE
    LOTUS_SS  WK1  5/22/89  4:29p    71348 ...A C:\123\FINANCE
    QUARTER4  WK1  6/06/89  2:55p     1407 ...A C:\123\FINANCE                ↓
    SKIP1     WK1  5/03/89 12:26p    36474 ...A C:\123\FINANCE

 51 Listed=  1069458 bytes     0 Selected=         0 bytes   12615680=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

The next step is to find the files that contain "Skippies."

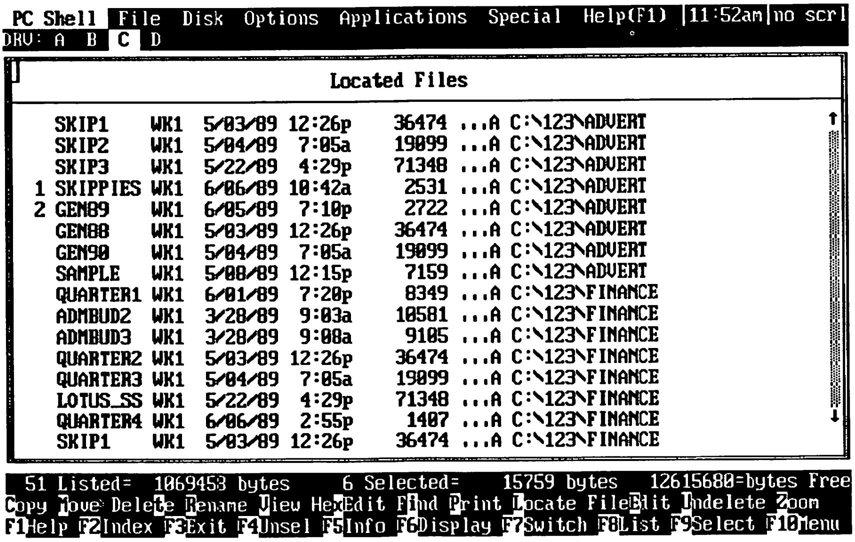
2. Press I to choose the **Find** command. The File Search dialog box appears:



```
                    File Search
 Enter case insensitive text to search for:
    [skippies.......................]
 in   21 files.

 Search:               If found:
 ( ) All files         (•) Select file and continue
 ( ) Selected files    ( ) Pause search
 (•) Unselected files
```

- Enter skippies in the text box.
- Press Tab to move to the Search options.
- Press A to search all of the files.
- Press S to select the files once they are found.
- Press Enter to start the search.

All files in the Locate window will be searched and those containing "Skippies" will be found and marked as selected in the window.



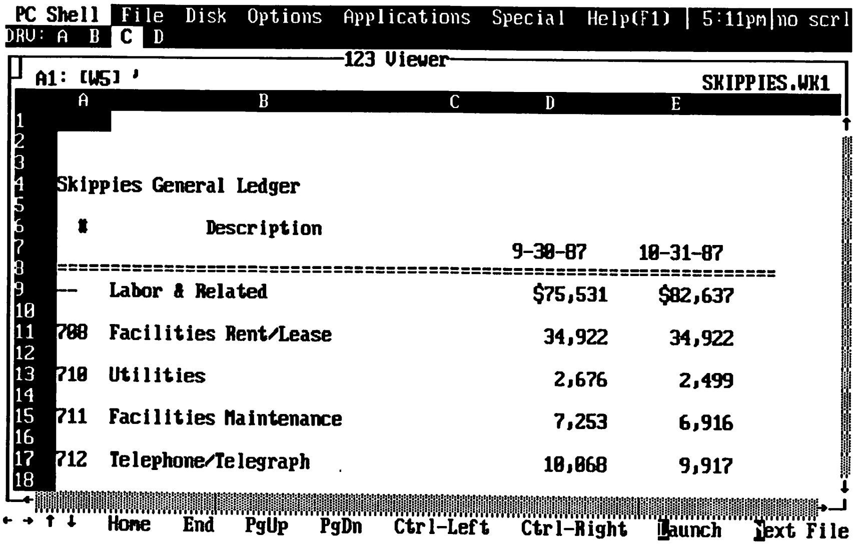
PC Shell
File
Disk
Options
Applications
Special
Help(F1)
11:52am
no scrl
DRV: A B C D
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
                           Located Files

    SKIP1     WK1  5/03/89 12:26p    36474 ...A C:\123\ADVERT
    SKIP2     WK1  5/04/89  7:05a    19099 ...A C:\123\ADVERT
    SKIP3     WK1  5/22/89  4:29p    71348 ...A C:\123\ADVERT
  1 SKIPPIES  WK1  6/06/89 10:42a     2531 ...A C:\123\ADVERT
  2 GEN89     WK1  6/05/89  7:10p     2722 ...A C:\123\ADVERT
    GEN88     WK1  5/03/89 12:26p    36474 ...A C:\123\ADVERT
    GEN90     WK1  5/04/89  7:05a    19099 ...A C:\123\ADVERT
    SAMPLE    WK1  5/08/89 12:15p     7159 ...A C:\123\ADVERT
    QUARTER1  WK1  6/01/89  7:20p     8349 ...A C:\123\FINANCE
    ADMBUD2   WK1  3/28/89  9:03a    10581 ...A C:\123\FINANCE
    ADMBUD3   WK1  3/28/89  9:08a     9105 ...A C:\123\FINANCE
    QUARTER2  WK1  5/03/89 12:26p    36474 ...A C:\123\FINANCE
    QUARTER3  WK1  5/04/89  7:05a    19099 ...A C:\123\FINANCE
    LOTUS_SS  WK1  5/22/89  4:29p    71348 ...A C:\123\FINANCE
    QUARTER4  WK1  6/06/89  2:55p     1407 ...A C:\123\FINANCE
    SKIP1     WK1  5/03/89 12:26p    36474 ...A C:\123\FINANCE

 51 Listed=  1069453 bytes     6 Selected=    15759 bytes   12615680=bytes Free
```

There were two files selected.

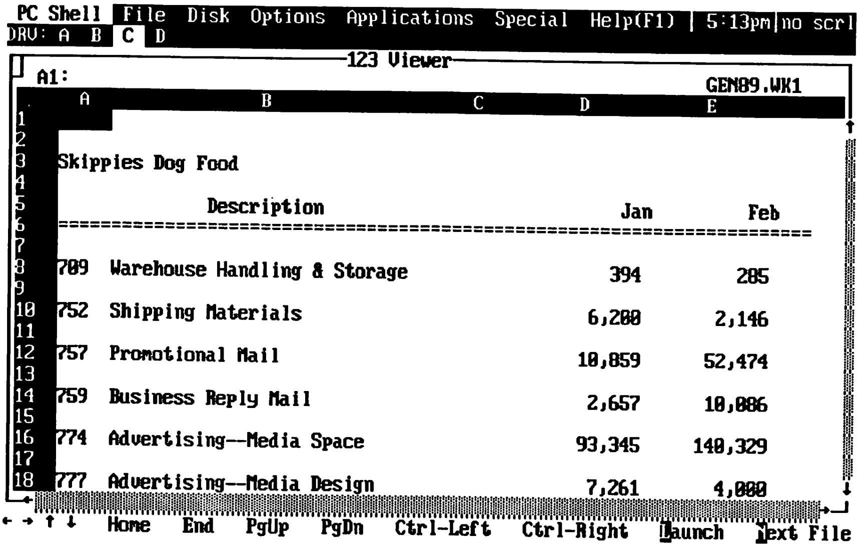
The next step is to determine which of the two files is the one containing the advertising budget.

3. Press **V** to view the selected files. The first file viewed is SKIPPIES.WK1.


PC Shell File Disk Options Applications Special Help(F1) | 5:11pm | no scrl
DRV: A B C D
123 Viewer
A1: [W5] '
SKIPPIES.WK1
A B C D E
← → ↑ ↓ Home End PgUp PgDn Ctrl-Left Ctrl-Right Launch Next File

```
Skippies General Ledger

 #          Description
                                             9-30-87      10-31-87
=====================================================================
--   Labor & Related                         $75,531      $82,637

700  Facilities Rent/Lease                    34,922       34,922

710  Utilities                                 2,676        2,499

711  Facilities Maintenance                    7,253        6,916

712  Telephone/Telegraph                      10,068        9,917
```

This file does not contain the advertising budget. Press "N" to view the next selected file. GEN89.WK1 is viewed:


PC Shell File Disk Options Applications Special Help(F1) | 5:13pm | no scrl
DRV: A B C D
123 Viewer
A1:
GEN89.WK1
A B C D E
← → ↑ ↓ Home End PgUp PgDn Ctrl-Left Ctrl-Right Launch Next File

```
Skippies Dog Food

            Description                             Jan          Feb
=====================================================================

709  Warehouse Handling & Storage                   394          285

752  Shipping Materials                           6,200        2,146

757  Promotional Mail                            10,859       52,474

759  Business Reply Mail                          2,657       10,886

774  Advertising--Media Space                    93,345      140,329

777  Advertising--Media Design                    7,261        4,000
```

This is the file you want to make changes to.

The next step is to launch Lotus 1-2-3 and make the necessary changes.

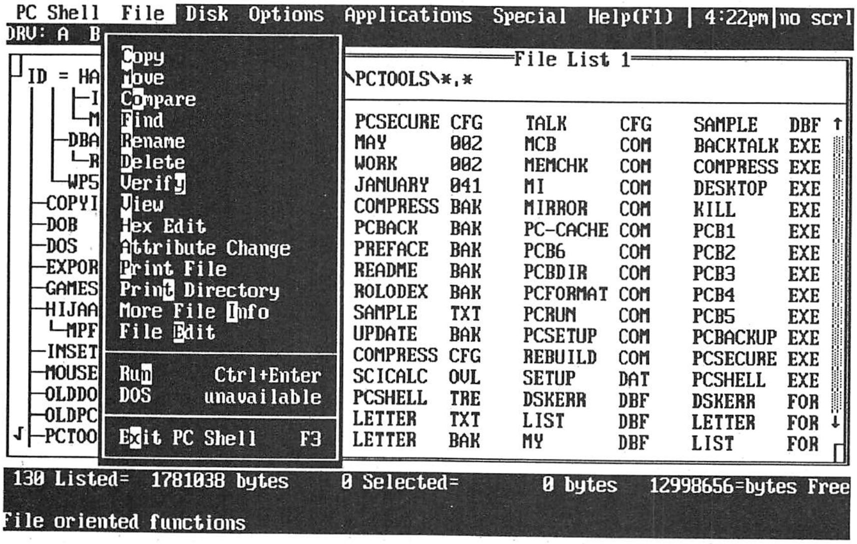
4. Press **L** to launch Lotus 1-2-3 and make the changes to the file.

This will exit PC Shell, run Lotus 1-2-3, and automatically type the characters to load this file into Lotus 1-2-3 for you.

When you have finished making the changes, exit Lotus 1-2-3 and you will be returned to PC Shell's Locate window, where you can view another file or use any other PC Shell file command.

The File Menu

Choosing **File** from the horizontal menu bar displays the File pull-down menu.



```
 PC Shell  File  Disk  Options  Applications  Special  Help(F1) | 4:22pm|no scrl
DRV: A  B
 ID = HA   Copy                    ═══════════File List 1═══════════
       ├I   Move                   \PCTOOLS\*.*
       └M   Compare
     ─DBA   Find                   PCSECURE CFG    TALK     CFG    SAMPLE   DBF
       └R   Rename                 MAY      002    MCB      COM    BACKTALK EXE
     └WP5   Delete                 WORK     002    MEMCHK   COM    COMPRESS EXE
   ─COPYI   Verify                 JANUARY  041    MI       COM    DESKTOP  EXE
   ─DOB     View                   COMPRESS BAK    MIRROR   COM    KILL     EXE
   ─DOS     Hex Edit               PCBACK   BAK    PC-CACHE COM    PCB1     EXE
   ─EXPOR   Attribute Change       PREFACE  BAK    PCB6     COM    PCB2     EXE
   ─GAMES   Print File             README   BAK    PCBDIR   COM    PCB3     EXE
   ─HIJAA   Print Directory        ROLODEX  BAK    PCFORMAT COM    PCB4     EXE
    └MPF    More File Info         SAMPLE   TXT    PCRUN    COM    PCB5     EXE
   ─INSET   File Edit              UPDATE   BAK    PCSETUP  COM    PCBACKUP EXE
   ─MOUSE                          COMPRESS CFG    REBUILD  COM    PCSECURE EXE
   ─OLDDO   Run       Ctrl+Enter   SCICALC  OVL    SETUP    DAT    PCSHELL  EXE
   ─OLDPC   DOS      unavailable   PCSHELL  TRE    DSKERR   DBF    DSKERR   FOR
                                   LETTER   TXT    LIST     DBF    LETTER   FOR
   ─PCTOO   Exit PC Shell     F3   LETTER   BAK    MY       DBF    LIST     FOR
 130 Listed=  1781038 bytes     0 Selected=       0 bytes   12998656=bytes Free
File oriented functions
```

Copy

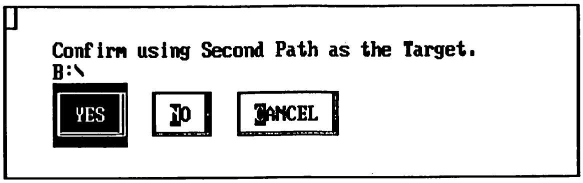
The Copy command allows you to copy a single file or a group of files. Files may be copied from one drive to another, to the same drive with a new file name, or to the same drive, but into a different directory.

1. Select the directory containing the file(s) you want to copy *from* in the Tree list window (use the Tab key or click in the Tree list window with the mouse). If you have two file lists active (you have pressed the INS key or selected Two List Display under the Options menu), then select the drive and directory you want to copy the files *to* in the second file list.
2. Press the Tab key or click into the File List window that contains the file(s) you want to copy. Select the file(s) you want to copy using the cursor keys and Enter or by clicking on them with the mouse.

Note: If you are using the Two List Display to copy, proceed to step 3. If you are using the Single List Display, proceed to step 4.

3. Choose **Copy** from the File menu, or press C, or click on "Copy" on the Command Bar. PC Shell displays a message asking you if the second

window display is the one you want to copy the selected file(s) to. If so, select **Yes.**



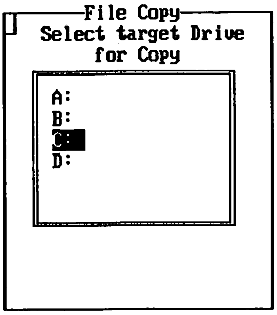
Confirm using Second Path as the Target.
B:\

PC Shell copies the file(s) to the new location, displaying the File Copy dialog box with the file(s) being copied and the path of the new location. Upon completion you are returned to the main PC Shell screen.

- If the second window display is not the one you want to copy the selected files to, select **No.** Proceed to step 4 to continue with the drive and/or subdirectory selection process.

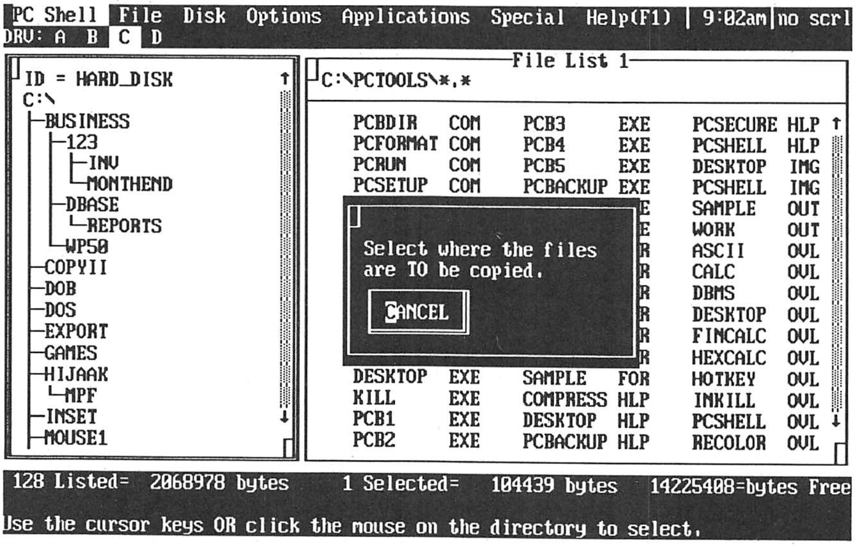
Selecting **Cancel** ends the copy process and returns you to the main PC Shell screen.

4. The File Copy box is displayed for you to select the target drive to copy the file(s) to.



Select target Drive for Copy

5. To proceed, select the target drive by pressing a drive letter or clicking on the drive letter with the mouse, or press Esc to end the copy process. If the target drive contains subdirectories, they will be displayed in the Tree window and a message appears (below) requesting you to select the subdirectory where the file(s) are to be copied.



```
ID = HARD_DISK
C:\
├BUSINESS
│ ├123
│ │ ├INV
│ │ └MONTHEND
│ ├DBASE
│ │ └REPORTS
│ └WP50
├COPYII
├DOB
├DOS
├EXPORT
├GAMES
├HIJAAK
│ └MPF
├INSET
├MOUSE1
```

```
C:\PCTOOLS\*.*

PCBDIR   COM   PCB3     EXE   PCSECURE HLP
PCFORMAT COM   PCB4     EXE   PCSHELL  HLP
PCRUN    COM   PCB5     EXE   DESKTOP  IMG
PCSETUP  COM   PCBACKUP EXE   PCSHELL  IMG
                        E     SAMPLE   OUT
                        E     WORK     OUT
                        R     ASCII    OVL
                        R     CALC     OVL
                        R     DBMS     OVL
                        R     DESKTOP  OVL
                        R     FINCALC  OVL
                        R     HEXCALC  OVL
DESKTOP  EXE   SAMPLE   FOR   HOTKEY   OVL
KILL     EXE   COMPRESS HLP   INKILL   OVL
PCB1     EXE   DESKTOP  HLP   PCSHELL  OVL
PCB2     EXE   PCBACKUP HLP   RECOLOR  OVL
```

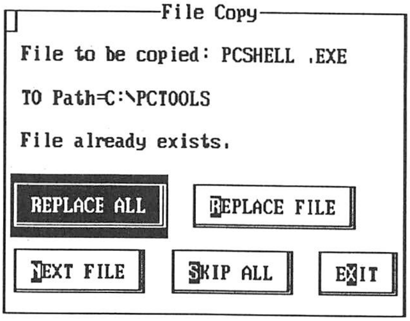
Select where the files are TO be copied.

128 Listed= 2068978 bytes 1 Selected= 104439 bytes 14225408=bytes Free

Use the cursor keys OR click the mouse on the directory to select.

6. From the Tree window select the subdirectory to copy the file(s) *to*.

7. If the selected file name(s) exist in the target subdirectory or drive, the File Copy dialog box (below) is displayed for you to select one of the five options.



File to be copied: PCSHELL .EXE

TO Path=C:\PCTOOLS

File already exists.

Replace All: replaces all file(s) in the target subdirectory with the same name(s) as the selected file(s).

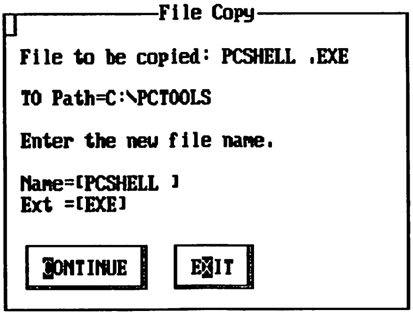
Replace File: replaces the current file in the target subdirectory with the same name as the selected file.

Next File: skips to the next file. No action is taken on the current file.

Skip All: skips all selected files and returns to the main PC Shell screen.

Exit: returns to the main PC Shell screen.

8. If you are copying file(s) into the same subdirectory, on the same drive, the File Copy dialog box (below) will appear for you to enter a new file name. You may then select **Continue** or **Exit**



```
File Copy
File to be copied: PCSHELL .EXE
TO Path=C:\PCTOOLS
Enter the new file name.
Name=[PCSHELL ]
Ext =[EXE]
```

PC Shell copies the file(s) to the new location, displaying the File Copy dialog box with the file being copied and the path of the new location. Upon completion you are returned to the main PC Shell screen.

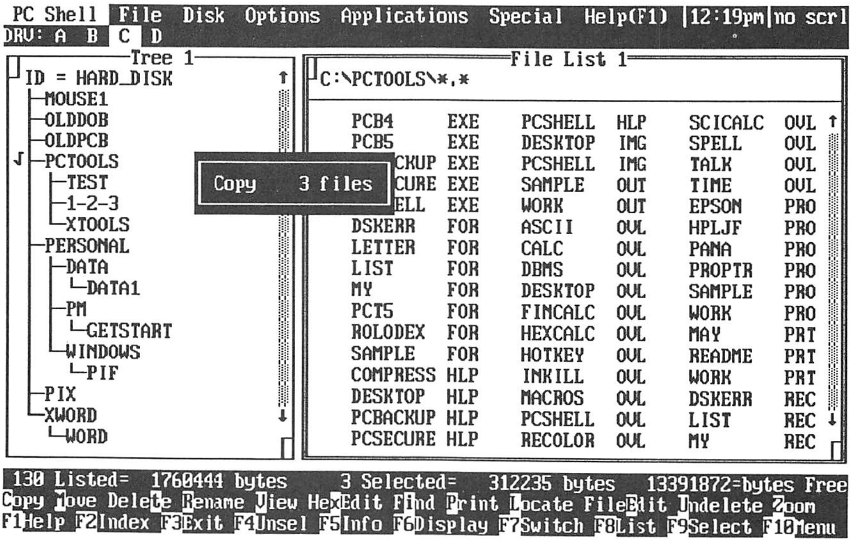
To Copy File(s) Using the Mouse:

One of PC Shell's convenient features is the ability to copy files by dragging the selected file(s) from one subdirectory or disk to another, with simple mouse movements.

Single List Display File Copy

Use the Single List Display to copy file(s) on the same drive, from one subdirectory to another.

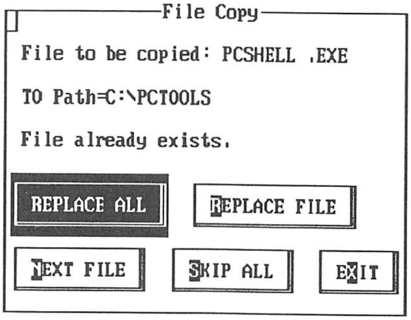
1. Select the directory containing the file(s) you want to copy from the Tree List window (press the Tab key or click in the Tree List window with the mouse.)
2. From the File List window select the file(s) to be copied, using the cursor keys and Enter, or the mouse.
3. Position the mouse pointer on one of the selected files. Click on the file with the left mouse button and hold the mouse button down, dragging the file to the target subdirectory in the Tree window. As you begin dragging the mouse, a small copy box appears and moves with the mouse cursor. The box displays the number of files that will be copied.


PC Shell
File
Disk
Options
Applications
Special
Help(F1)
12:19pm
no scrl
DRV: A B C D
Tree 1
File List 1
Copy 3 files
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
ID = HARD_DISK
 ├MOUSE1
 ├OLDDOB
 ├OLDPCB
√├PCTOOLS
 │ ├TEST
 │ ├1-2-3
 │ └XTOOLS
 ├PERSONAL
 │ ├DATA
 │ │ └DATA1
 │ ├PM
 │ │ └GETSTART
 │ └WINDOWS
 │   └PIF
 ├PIX
 └XWORD
   └WORD
```

```
C:\PCTOOLS\*.*

PCB4     EXE   PCSHELL  HLP   SCICALC  OVL
PCB5     EXE   DESKTOP  IMG   SPELL    OVL
    CKUP EXE   PCSHELL  IMG   TALK     OVL
    CURE EXE   SAMPLE   OUT   TIME     OVL
     ELL EXE   WORK     OUT   EPSON    PRO
DSKERR   FOR   ASCII    OVL   HPLJF    PRO
LETTER   FOR   CALC     OVL   PANA     PRO
LIST     FOR   DBMS     OVL   PROPTR   PRO
MY       FOR   DESKTOP  OVL   SAMPLE   PRO
PCT5     FOR   FINCALC  OVL   WORK     PRO
ROLODEX  FOR   HEXCALC  OVL   MAY      PRT
SAMPLE   FOR   HOTKEY   OVL   README   PRT
COMPRESS HLP   INKILL   OVL   WORK     PRT
DESKTOP  HLP   MACROS   OVL   DSKERR   REC
PCBACKUP HLP   PCSHELL  OVL   LIST     REC
PCSECURE HLP   RECOLOR  OVL   MY       REC

130 Listed=  1760444 bytes    3 Selected=   312235 bytes   13391872=bytes Free
```

4. When you release the mouse button over the selected subdirectory name in the Tree window, the copy operation automatically starts. If the selected file name(s) exist in the target subdirectory, the File Copy dialog box (below) is displayed for you to select one of five options.



```
File to be copied: PCSHELL .EXE

TO Path=C:\PCTOOLS

File already exists.
```

Replace All: replaces all file(s) in the target subdirectory with the same names(s) as the selected file(s).

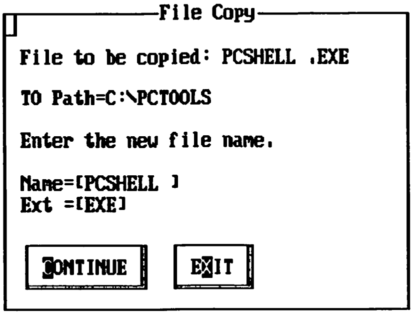
Replace File: replaces the current file in the target subdirectory with the same name as the selected file.

Next File: skips to the next file. No action is taken on the current file.

Skip All: skips all selected files and returns to the main PC Shell screen.

Exit: returns to the main PC Shell screen.

5. If copying file(s) into the same subdirectory, on the same drive, the File Copy dialog box (below) requests you to enter a new file name, as it cannot copy files to themselves. You may then select **Continue** or **Exit.**



File to be copied: PCSHELL .EXE

TO Path=C:\PCTOOLS

Enter the new file name.

Name=[PCSHELL]
Ext =[EXE]

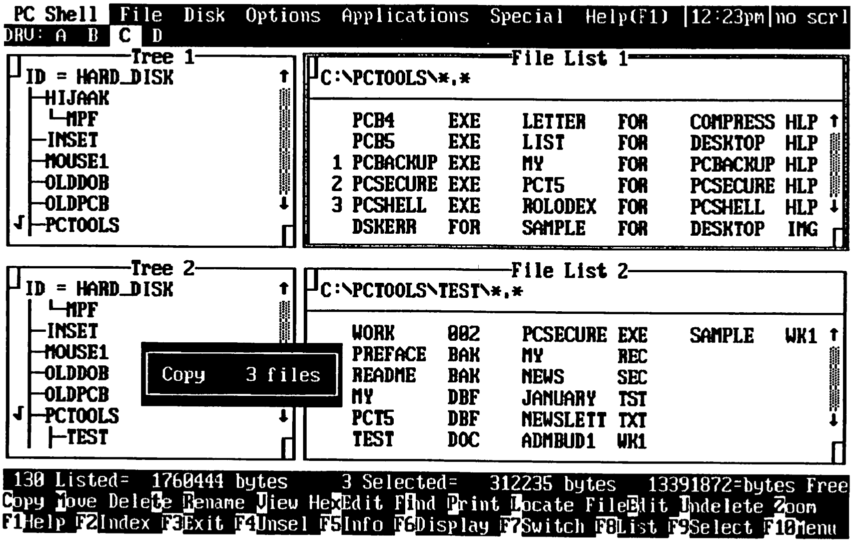
PC Shell copies the file(s) to the new location, displaying the File Copy dialog box with the file being copied and the path of the new location. Upon completion you are returned to the main PC Shell screen.

Two List Display File Copy

Use the Two List Display to copy file(s) to a different drive or from one File List window to another.

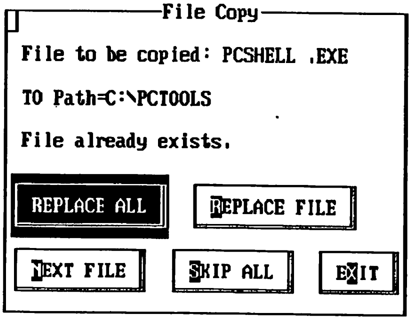
Note: All copy procedures which can be performed with the Single List Display can also be performed with the Two List Display.

1. Select the **Two List Display** from the Options pull-down menu. PC Shell opens a second set of windows.
2. Press the Tab key or click in the Tree List window with the mouse to select the directory containing the files you want to copy from the Tree List window.
3. From the File List window select the file(s) to be copied, using the cursor keys and Enter, or clicking with the mouse.
4. Position the mouse pointer on one of the selected files. Click on the file with the left mouse button and hold the mouse button down, dragging the file to the target subdirectory in one of the Tree List windows or the other File List window. As you begin dragging the mouse, a small copy box appears and moves with the mouse cursor (see the following illustration). The box displays the number of files that will be copied.


PC Shell File Disk Options Applications Special Help(F1) 12:23pm no scrl
DRV: A B C D
Tree 1
File List 1
Tree 2
File List 2
Copy 3 files
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
ID = HARD_DISK          C:\PCTOOLS\*.*
 ├HIJAAK
 │ └MPF                   PCB4     EXE   LETTER   FOR   COMPRESS HLP
 ├INSET                   PCB5     EXE   LIST     FOR   DESKTOP  HLP
 ├MOUSE1                1 PCBACKUP EXE   MY       FOR   PCBACKUP HLP
 ├OLDDOB                2 PCSECURE EXE   PCT5     FOR   PCSECURE HLP
 ├OLDPCB                3 PCSHELL  EXE   ROLODEX  FOR   PCSHELL  HLP
 ├PCTOOLS                 DSKERR   FOR   SAMPLE   FOR   DESKTOP  IMG

ID = HARD_DISK          C:\PCTOOLS\TEST\*.*
 │ └MPF
 ├INSET                   WORK     002   PCSECURE EXE   SAMPLE   WK1
 ├MOUSE1                  PREFACE  BAK   MY       REC
 ├OLDDOB                  README   BAK   NEWS     SEC
 ├OLDPCB                  MY       DBF   JANUARY  TST
 ├PCTOOLS                 PCT5     DBF   NEWSLETT TXT
 │ ├TEST                  TEST     DOC   ADMBUD1  WK1

 130 Listed= 1760444 bytes    3 Selected= 312235 bytes   13391872=bytes Free
```

5. When you release the mouse button over the selected subdirectory name in the Tree or File List window, the copy operation automatically starts. If the selected file name(s) exist in the target subdirectory, the File Copy dialog box (below) is displayed for you to select one of the five options.



File to be copied: PCSHELL .EXE

TO Path=C:\PCTOOLS

File already exists.

Replace All: replaces all file(s) in the target subdirectory with the same names(s) as the selected file(s).

Replace File: replaces current file in the target subdirectory with the same name as the selected file.

Next File: skips to the next file. No action is taken on the current file.

Skip All: skips all selected files and returns to the main PC Shell screen.

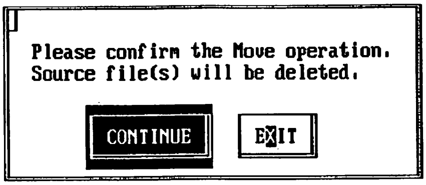
Exit: returns to the main PC Shell screen.

PC Shell copies the file(s) to the new location, displaying the File Copy dialog box with the file being copied and the path of the new location. Upon completion you are returned to the main PC Shell screen.

Move

The Move Command allows you to move a single file or a group of files. Move is just like Copy except that it automatically deletes the source file(s) from the original disk or directory after the copy is successful. You can move files from one disk to another or onto the same disk into a different subdirectory.

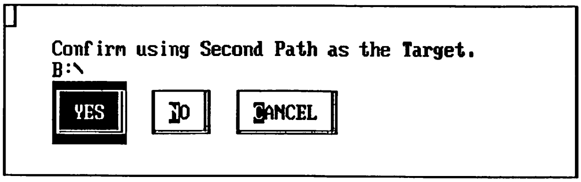
1. Select the directory containing the file(s) to be moved from the Tree list window (press the Tab key or click in the Tree List window with the mouse). If you have two file lists displayed (you have pressed the INS key or selected Two List Display under the Options menu), then select the drive and directory you want to move the file(s) to from the second file list.
2. Press the Tab key or click the mouse into the File List window that contains the file(s) you want to move. Select the file(s) you want to move using the cursor keys and Enter, or clicking with the mouse.
3. Choose **Move** from the File pull-down menu, or press M, or click on "Move" on the Command Bar. PC Shell displays a message warning you that Move will delete the source file(s) after the copy has been completed.


Please confirm the Move operation.
Source file(s) will be deleted.

- Select **Continue** to proceed or **Exit** to end the move command.

Note: If you are using the Two List Display, proceed with step 4. If you are using the Single List Display proceed to step 5.

4. PC Shell asks you if the second window display is the one you want to move the selected file(s) to. If so, select **Yes**.



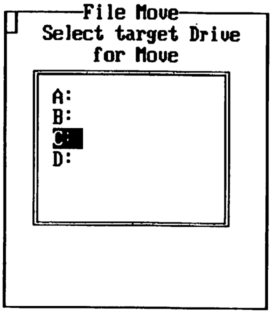
Confirm using Second Path as the Target.
B:\

The file(s) are moved to the new location, and the File Move dialog box is displayed, showing you the file being moved and the path of the new location. Upon completion you are returned to the main PC Shell screen.

- If the second window display is not the one you want to move the selected files to, select **No**. Proceed to step 5 to continue with the drive and/or subdirectory selection process.

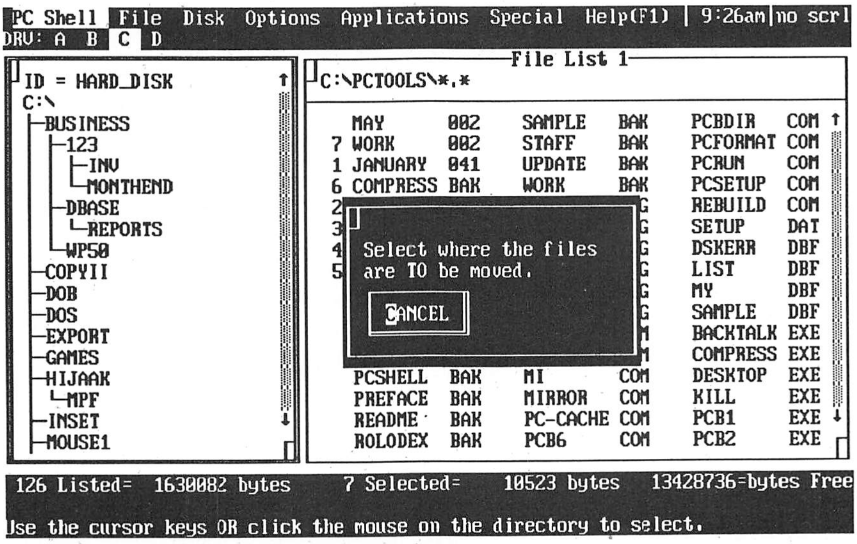
Selecting **Cancel** ends the move process and returns you to the main PC Shell screen.

5. The File Move dialog box asks you to select the target drive to move the file(s) to.



File Move
Select target Drive
for Move

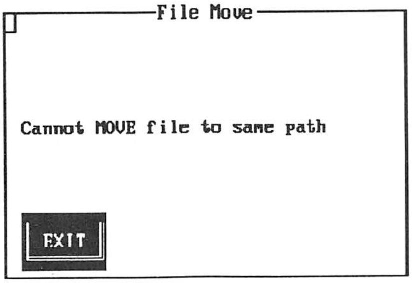
6. To proceed, select the target drive by pressing a drive letter or clicking on a drive letter with the mouse, or press Esc to end the move process. If the target drive contains subdirectories, they will be displayed in the Tree window. A message appears for you to select the subdirectory in which the file(s) are to be moved.


PC Shell File Disk Options Applications Special Help(F1) | 9:26am|no scrl
DRV: A B C D
File List 1
CANCEL

```
ID = HARD_DISK              C:\PCTOOLS\*.*
C:\
├BUSINESS                     MAY      002   SAMPLE   BAK   PCBDIR   COM
│├123                       7 WORK     002   STAFF    BAK   PCFORMAT COM
││├INV                      1 JANUARY  041   UPDATE   BAK   PCRUN    COM
││└MONTHEND                 6 COMPRESS BAK   WORK     BAK   PCSETUP  COM
│├DBASE                     2                           G   REBUILD  COM
││└REPORTS                  3                           G   SETUP    DAT
│└WP50                      4  Select where the files   G   DSKERR   DBF
├COPYII                     5  are TO be moved.         G   LIST     DBF
├DOB                                                    G   MY       DBF
├DOS                                                    G   SAMPLE   DBF
├EXPORT                                                 M   BACKTALK EXE
├GAMES                                                  M   COMPRESS EXE
├HIJAAK                       PCSHELL  BAK   MI       COM   DESKTOP  EXE
│└MPF                         PREFACE  BAK   MIRROR   COM   KILL     EXE
├INSET                        README   BAK   PC-CACHE COM   PCB1     EXE
├MOUSE1                       ROLODEX  BAK   PCB6     COM   PCB2     EXE
126 Listed=  1630082 bytes     7 Selected=    10523 bytes   13428736=bytes Free
Use the cursor keys OR click the mouse on the directory to select.
```

7. From the Tree window select the subdirectory to move the file(s) to, or select **Cancel** to end the move. PC Shell will move the file(s) to the new target location, deleting the original source file(s). Upon completion you are returned to the main PC Shell screen.

Note: If the same subdirectory or drive is selected to move the file(s) to, the File Move dialog box below is displayed with the message "Cannot MOVE file to same path." Select **Exit** to return to the main PC Shell screen.



Cannot MOVE file to same path

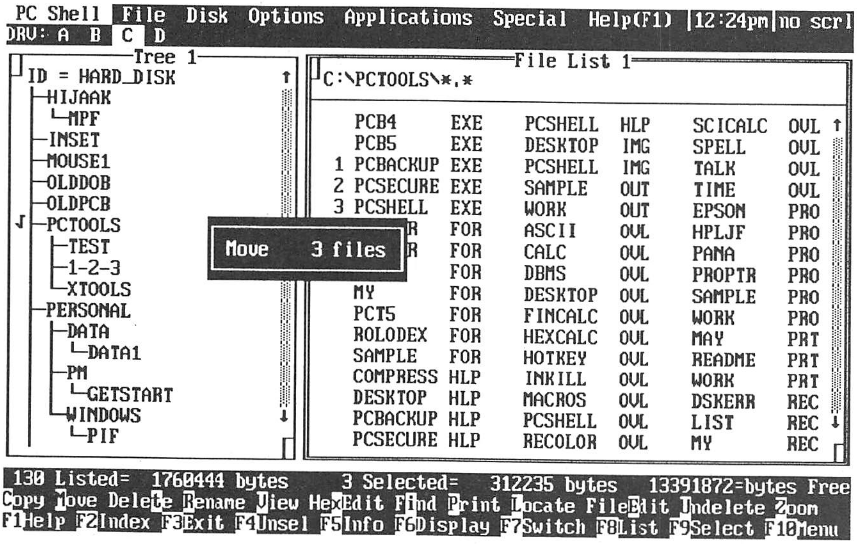
To Move File(s) Using the Mouse:

Like Copy, PC Shell can move file(s) by dragging the selected file(s) from one subdirectory or drive to another, with simple mouse movements.

Single List Display File Move

Use the Single List Display to move file(s) on the same drive, from one subdirectory to another.

1. Select the directory containing the files to be moved from the Tree List window (press the Tab key or click in the Tree List window with the mouse.)
2. From the File List window, select the file(s) to be moved, using the cursor keys and Enter, or clicking with the mouse.
3. Position the mouse pointer on one of the selected files. While holding down the **Ctrl** key from the keyboard, click the left mouse button and hold down the mouse button on the file, then drag the selected file(s) to the target subdirectory in the Tree List window. As you begin dragging the mouse, a small move box showing the number of files you are moving appears and moves with the mouse cursor.


PC Shell File Disk Options Applications Special Help(F1) 12:24pm no scrl
DRV: A B C D
Tree 1
File List 1
Move 3 files
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

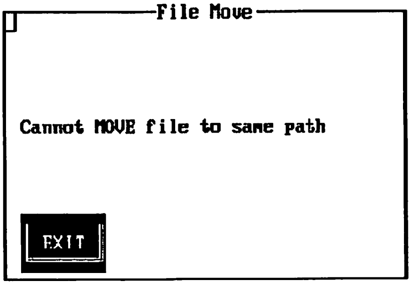
```
ID = HARD_DISK
├HIJAAK
│ └MPF
├INSET
├MOUSE1
├OLDDOB
├OLDPCB
├PCTOOLS
│ ├TEST
│ ├1-2-3
│ └XTOOLS
├PERSONAL
│ ├DATA
│ │ └DATA1
│ ├PM
│ │ └GETSTART
│ └WINDOWS
│   └PIF
```

```
C:\PCTOOLS\*.*

   PCB4      EXE    PCSHELL  HLP    SCICALC  OVL
   PCB5      EXE    DESKTOP  IMG    SPELL    OVL
 1 PCBACKUP  EXE    PCSHELL  IMG    TALK     OVL
 2 PCSECURE  EXE    SAMPLE   OUT    TIME     OVL
 3 PCSHELL   EXE    WORK     OUT    EPSON    PRO
           R FOR    ASCII    OVL    HPLJF    PRO
           R FOR    CALC     OVL    PANA     PRO
             FOR    DBMS     OVL    PROPTR   PRO
   MY        FOR    DESKTOP  OVL    SAMPLE   PRO
   PCT5      FOR    FINCALC  OVL    WORK     PRO
   ROLODEX   FOR    HEXCALC  OVL    MAY      PRT
   SAMPLE    FOR    HOTKEY   OVL    README   PRT
   COMPRESS  HLP    INKILL   OVL    WORK     PRT
   DESKTOP   HLP    MACROS   OVL    DSKERR   REC
   PCBACKUP  HLP    PCSHELL  OVL    LIST     REC
   PCSECURE  HLP    RECOLOR  OVL    MY       REC
```

```
 130 Listed=  1760444 bytes     3 Selected=   312235 bytes   13391872=bytes Free
```

4. When you release the mouse button over the selected subdirectory name in the Tree window, PC Shell displays a message for you to confirm that the file(s) are to be moved. When you select **Continue**, the move operation automatically starts. Pressing **Exit** cancels the operation.

Note: If the selected file(s) to move exist in the same target subdirectory, the File Move dialog box will be displayed with the message "Cannot MOVE file to same path." Select **EXIT** to return to the main PC Shell screen.



Cannot MOVE file to same path

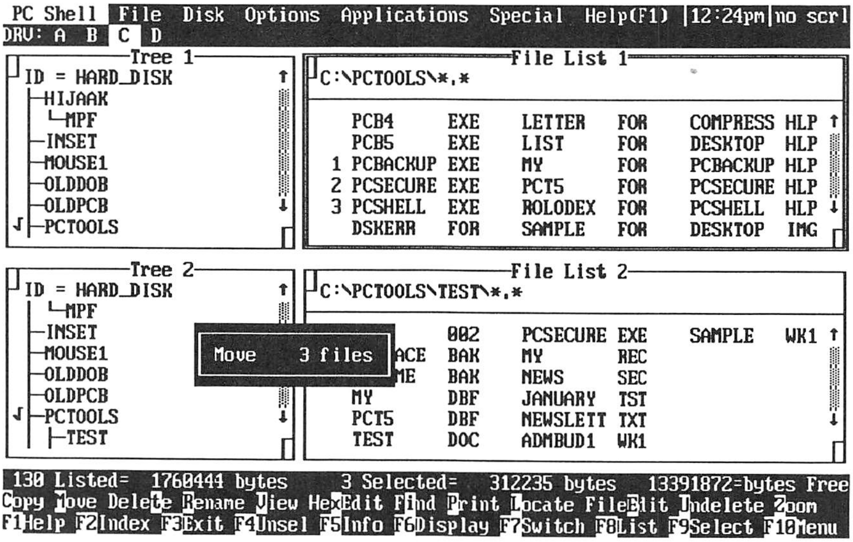
PC Shell will move the file(s) to the new target location, deleting the original source file(s). Upon completion you are returned to the main PC Shell screen.

Two List Display File Move

Use the Two List Display to move file(s) to a different drive or from one File List window to another.

Note: All move procedures which can be performed with the Single List Display, can also be performed with the Two List Display.

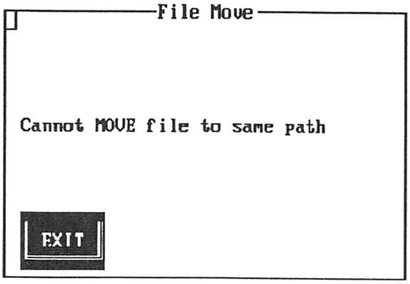
1. Select the **Two List Display** from the **Options menu.** PC Shell will open a second set of windows.
2. Select the directory containing the file(s) you want to move from the Tree List window (use the Tab key or click in the Tree List window with the mouse.)
3. From the File List window select the file(s) to be moved, using the cursor keys and Enter, or clicking with the mouse.
4. Position the mouse pointer on one of the selected files. While holding down the **Ctrl** key from the keyboard, click the left mouse button and hold down the mouse button on the file, then drag the selected file(s) to the target subdirectory in one of the Tree List windows or the other File List window. As you begin dragging the mouse, a small move box showing the number of files you are moving appears and moves with the mouse cursor.



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |12:24pm|no scrl
DRV: A  B  C  D
            Tree 1                              File List 1
 ID = HARD_DISK          ↑   C:\PCTOOLS\*.*
  ├HIJAAK
  │ └MPF                        PCB4     EXE   LETTER   FOR   COMPRESS HLP ↑
  ├INSET                        PCB5     EXE   LIST     FOR   DESKTOP  HLP
  ├MOUSE1                     1 PCBACKUP EXE   MY       FOR   PCBACKUP HLP
  ├OLDDOB                     2 PCSECURE EXE   PCT5     FOR   PCSECURE HLP
  ├OLDPCB                ↓    3 PCSHELL  EXE   ROLODEX  FOR   PCSHELL  HLP ↓
 √├PCTOOLS                      DSKERR   FOR   SAMPLE   FOR   DESKTOP  IMG

            Tree 2                              File List 2
 ID = HARD_DISK          ↑   C:\PCTOOLS\TEST\*.*
  │ └MPF
  ├INSET                                 002   PCSECURE EXE   SAMPLE   WK1 ↑
  ├MOUSE1           Move     3 files     ACE   BAK   MY       REC
  ├OLDDOB                                ME    BAK   NEWS     SEC
  ├OLDPCB                       MY       DBF   JANUARY  TST
 √├PCTOOLS               ↓      PCT5     DBF   NEWSLETT TXT                 ↓
  │ ├TEST                       TEST     DOC   ADMBUD1  WK1
 130 Listed=  1760444 bytes    3 Selected=   312235 bytes   13391872=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate File Edit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

5. When you release the mouse button over the selected subdirectory name in the Tree window, PC Shell displays a message for you to confirm that the file(s) are to be moved. When you select **Continue**, the move operation automatically starts. Pressing **Exit** cancels the operation.

Note: If the selected file(s) to move exist in the same target subdirectory, the File Move dialog box is displayed with the message "Cannot MOVE file to same path." Select **Exit** to return to the main PC Shell screen.



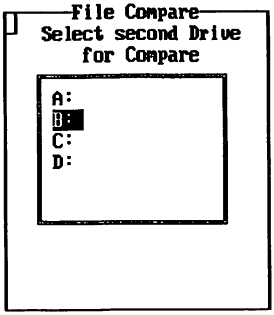
Cannot MOVE file to same path

PC Shell moves the file(s)to the new target location, deleting the original source file(s). Upon completion you are returned to the main PC Shell screen.

Compare

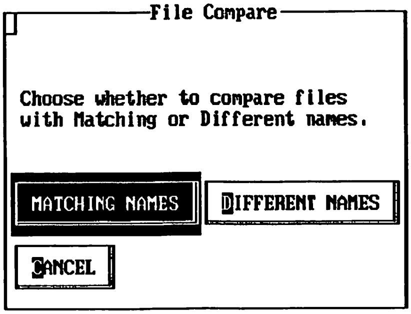
The Compare command allows you to compare two separate files to see if they're identical. You can also compare several pairs of files at once. The files can have matching or different file names, can be on the same disk or different disks, or can be in the same directory with different file names.

1. Select the file(s) to compare. The selected file(s) will be compared with the file(s) in the directory that you select later in this procedure.
2. Choose **Compare** from the File pull-down menu.
   The File Compare dialog box is displayed. If the Two List Display is active, proceed to step number 4.



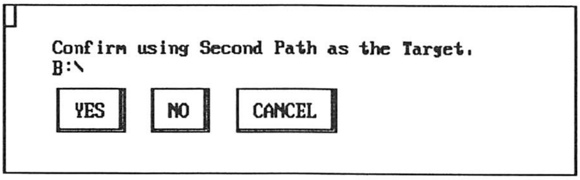
Select second Drive for Compare

3. Select the drive that contains the file(s) to be compared by pressing the drive letter or clicking on the drive letter with the mouse, or press Esc to end the compare. The following dialog box is displayed.



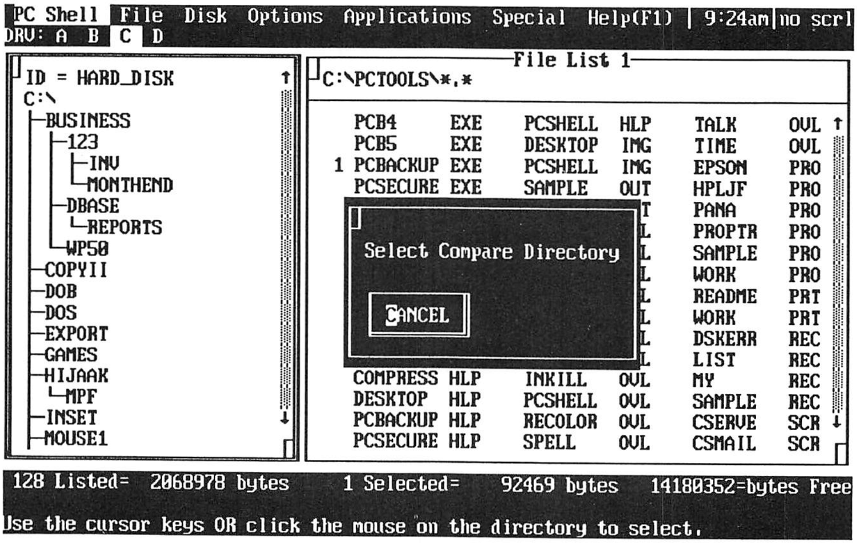
Choose whether to compare files with Matching or Different names.

4. Select either **Matching Names** or **Different Names** to continue. Selecting **Exit** ends the procedure. If you are using the Two List Display, PC Shell asks you if the second window is the one containing the files you want to compare. If so, select Yes.



Confirm using Second Path as the Target.
B:\

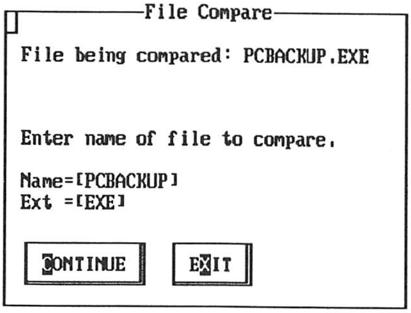
5. If the drive contains subdirectories, the Select Compare Directory dialog box is displayed. Select the directory that contains the files you want to compare. **Cancel** returns you to the main PC Shell screen.



PC Shell File Disk Options Applications Special Help(F1) | 9:24am no scrl
DRV: A B C D
File List 1
Select Compare Directory
CANCEL

```
ID = HARD_DISK            C:\PCTOOLS\*.*
C:\
├BUSINESS                   PCB4     EXE   PCSHELL  HLP   TALK     OVL
│├123                       PCB5     EXE   DESKTOP  IMG   TIME     OVL
││├INV                    1 PCBACKUP EXE   PCSHELL  IMG   EPSON    PRO
││└MONTHEND                 PCSECURE EXE   SAMPLE   OUT   HPLJF    PRO
│├DBASE                                          T   PANA     PRO
││└REPORTS                                       L   PROPTR   PRO
│└WP50                                           L   SAMPLE   PRO
├COPYII                                          L   WORK     PRO
├DOB                                             L   README   PRT
├DOS                                             L   WORK     PRT
├EXPORT                                          L   DSKERR   REC
├GAMES                                           L   LIST     REC
├HIJAAK                     COMPRESS HLP   INKILL   OVL   MY       REC
│└MPF                       DESKTOP  HLP   PCSHELL  OVL   SAMPLE   REC
├INSET                      PCBACKUP HLP   RECOLOR  OVL   CSERVE   SCR
├MOUSE1                     PCSECURE HLP   SPELL    OVL   CSMAIL   SCR

128 Listed=  2068978 bytes    1 Selected=   92469 bytes   14180352=bytes Free
Use the cursor keys OR click the mouse on the directory to select.
```

6. If **Matching Names** is selected, the File Compare dialog box is displayed and the files are compared. If **Different Names** is selected, the File Compare dialog box is displayed, prompting you to enter the name of the file to be compared. Type the name and extension of the file to be compared. Select **Continue** to proceed or **Exit** to end the compare.



File being compared: PCBACKUP.EXE

Enter name of file to compare.

Name=[PCBACKUP]
Ext =[EXE]

Note: The File Compare dialog box opens and the files are compared. If the files differ, the File Compare dialog box notifies you. The dialog box also displays in which sector and at which offset (the position in the sector) the difference was found. The ASCII value of each difference is also displayed.

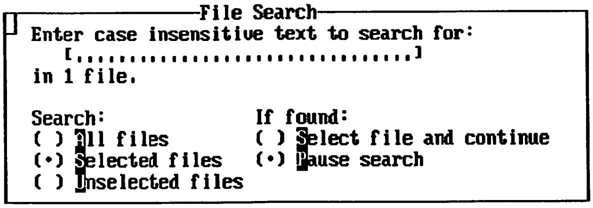
7. Selecting **Continue** will step through the compare process for each difference.

If you selected more than one file, each is processed in turn. After all files are processed, PC Shell returns to the main PC Shell screen.

Find

The **Find** command allows you to look for either an ASCII or HEX character string in all files in the window, selected files in the window, or unselected files in the window. The window can be a File List window or a Locate window. You can then select what to do once a file is found with the matching text. F9 toggles between hexadecimal and ASCII modes.

1. Select the file(s) you want to search. Each file is searched in the order chosen.
2. Choose **Find** from the File pull-down menu, or press I, or click on "Find" on the Command Bar. PC Shell displays the File Search dialog box.

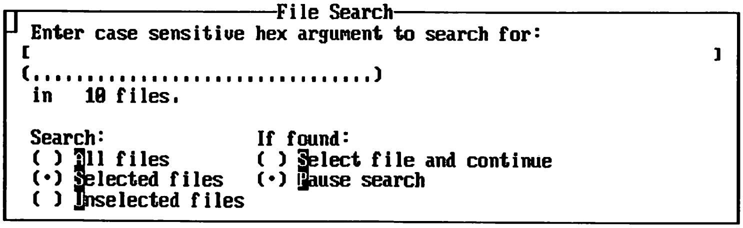


```
                    File Search
 Enter case insensitive text to search for:
    [................................]
 in 1 file.

 Search:                 If found:
 ( ) All files           ( ) Select file and continue
 (•) Selected files      (•) Pause search
 ( ) Unselected files
```

3. Enter a string of ASCII characters to search for in the text box.

   Note: The ASCII search is not case-sensitive. That is, you can enter text in any combination of upper- or lower-case letters. The maximum size of a search string is 32 characters.

- To enter HEX values, press F9 or click on "F9 Hex Mode" on the bottom line. This displays the hex search dialog box:



```
                    File Search
 Enter case sensitive hex argument to search for:
[                                                      ]
(..............................)
 in   10 files.

 Search:              If found:
 ( ) All files        ( ) Select file and continue
 (•) Selected files   (•) Pause search
 ( ) Unselected files
```

- Type in the desired HEX values. This type of search is case sensitive. If you enter invalid HEX values, PC Shell notifies you with a beep. The corresponding ASCII values are displayed below the HEX line.

  Pressing Enter will start the search. If you want to change the Search options:

4. Press Tab to move to the group of "Search" options and then select one of the following options using the Up and Down arrow keys and Enter, or press the highlighted letter of the option. You can also select the option by clicking on it with the mouse. If you do not want to change the Search option, press Tab to move to the "If found" options and go to step 5.

   All files: searches all the files in the current subdirectory for the matching text.

   Selected files: searches only the selected files for matching text.

   Unselected files: searches the unselected files for matching text.

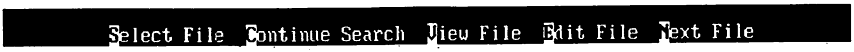
5. Select one of the "If found" options by using the up and down arrow keys and then pressing Enter, or pressing the highlighted letter of the option. You can also select the option by clicking on it with the mouse. If you do not want to change the If found option, press Tab and go to step 6.

   Select file and continue: marks a file as selected that contains the search text and then continues the search. When the requested files have all been searched, you will be returned to the window where you started, and the files that contain the search text will be marked as selected.

   Pause search: pauses the search process after a file is found that matches the text.

6. Press Enter to start the search.

- If the Pause search option was selected, once a file is found containing the search text, the search pauses and the bottom line shows the following options.



- Choose any of the options by pressing the highlighted letter or clicking on the option with the mouse:
  - **Select file:** marks the file as selected when the search has been completed on all files.
  - **Continue Search:** continues the search in the same file.
  - **View File:** displays the file. If the file is a Lotus 1-2-3 or dBASE file, the file is displayed in Lotus 1-2-3 or dBASE format, respectively.
  - **Edit File:** allows you to use the Hex editor on the file. The Sector Edit display appears with the cursor on the first byte of the matching string. With the Sector Edit you can edit or view sectors. To save the changes, select **Save** or **Cancel** to end the edit. See the Hex Edit command for information on editing a sector.
  - **Next File:** continues the search on the next file.

Once PC Shell has finished the search, you are returned to the window from which you invoked the Find command. See the example in the section entitled "An Example--Locating, Viewing, Launching Files" for a demonstration of how this command can be used in conjunction with the Locate command.

Example

To find all files in the window which contain "Tom."

Keyboard	**Mouse**
1. Press I.	1. Click on "Find" on the Command Bar.
2. Enter "tom."	2. Enter "tom."
3. Press Tab.	3. Click on A.
4. Press A.	4. Click on S.
5. Press S.	5. Click on "Enter Start Search" on the bottom line.
6. Press Enter.	

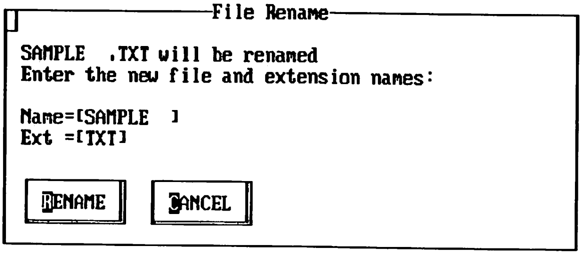
Rename

The Rename command allows you to rename files. You can change the name of a single file or multiple files.

1. Select the file(s) you want to rename.
2. Choose **Rename** from the File pull-down menu , or press R, or click on "Rename" on the Command Bar.

   Note: If you have multiple files selected, skip ahead to step 5.

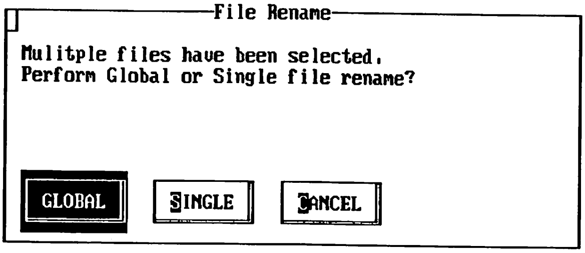
3. With one file selected, the File Rename dialog box appears with the current file name and extension displayed in the name and extension fields.



```
SAMPLE  .TXT will be renamed
Enter the new file and extension names:

Name=[SAMPLE  ]
Ext =[TXT]
```

4. Type in the new file name and extension and select **Rename** to rename the selected file. **Cancel** ends the rename process and returns to the window where you invoked **Rename**.

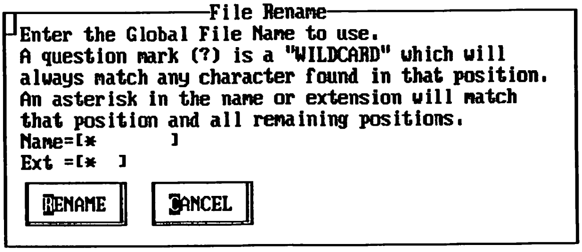
5. If you have more than one file selected, the following dialog box appears allowing you to change file names and/or extensions singly or globally. For example, if you have selected all your word processing documents and they have the extension .TXT, you can easily change all of the extensions to .DOC.



```
Mulitple files have been selected.
Perform Global or Single file rename?
```

6. Choose one of the following command buttons:

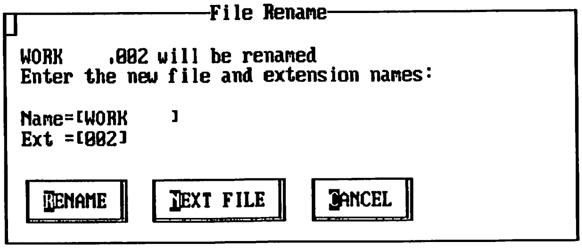
Global: displays the following dialog box for you to rename all of the selected files:



```
Enter the Global File Name to use.
A question mark (?) is a "WILDCARD" which will
always match any character found in that position.
An asterisk in the name or extension will match
that position and all remaining positions.
Name=[*        ]
Ext =[*  ]
```

- Type the name and/or extension you want to change to in the Name and Ext text boxes respectively, and select **Rename.** If you are renaming all .TXT files to .DOC, you would enter * in the Name field and DOC in the Extension field.

Single: displays the following dialog box so you can rename files one-by-one.



```
WORK    .002 will be renamed
Enter the new file and extension names:

Name=[WORK    ]
Ext =[002]
```

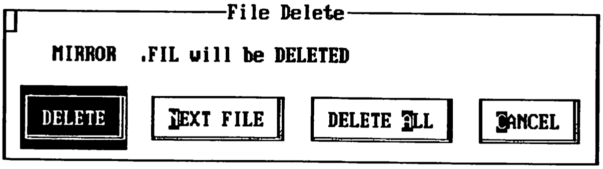
- Type the name and/or extension you want to change in the Name and Ext text box and select **Rename.** Selecting **Next File** displays the next selected file without renaming the current one. **Cancel** returns you to the main PC Shell screen, or if you were in the File Locator window when you invoked **Rename,** you will be returned to that window.

Delete

The Delete command allows you to delete a single file or a group of files at once. Unlike the DOS Delete, PC Shell's Delete can erase files marked with the attributes READ-ONLY, SYSTEM or HIDDEN. Please refer to the Attribute Change command for more information on attributes.

1. Select the file(s) you want to delete.
2. Choose **Delete** from the File pull-down menu, or press T, or click on "Delete" on the Command Bar. The File Delete dialog box is displayed with the

name of the first file selected. If more than one file is selected, four choices are also displayed: **Delete, Next File, Delete All** and **Cancel.** If one file is selected, only **Delete** and **Cancel** are displayed.



```
MIRROR  .FIL will be DELETED
```

3. Select any of the following commands:

   Delete: deletes the file listed.

   Next File: skips this file and displays the next file.

   Delete All: deletes all files selected without individual confirmation.

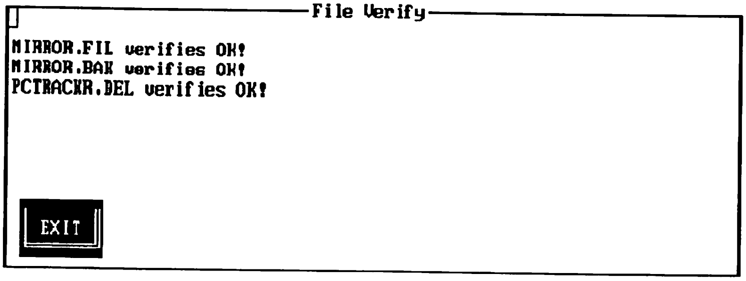
   Cancel: ends the delete process and returns to the main PC Shell screen.

PC Shell deletes the file(s) selected and returns you to the main PC Shell screen.

Verify

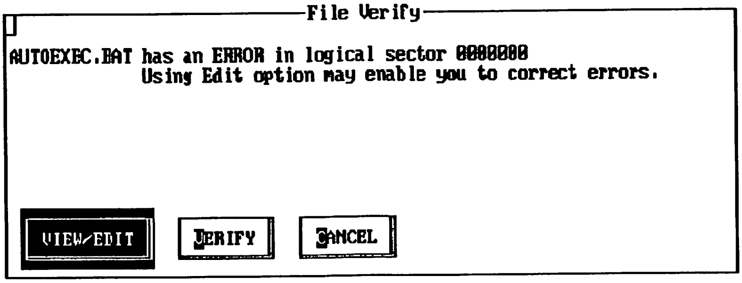
Verify reads all the sectors in a file to make certain the entire file can be read without any errors. The Verify command will read a single file or group of files.

1. Select the file(s) you want to verify.
2. Choose **Verify** from the File pull-down menu. The sector number changes as Verify works its way through the file. If there are no errors, the File Verify dialog box tells you that the file is OK. If you selected more than one file to verify, the next file begins verifying. Select **Exit** to return to the main PC Shell screen.



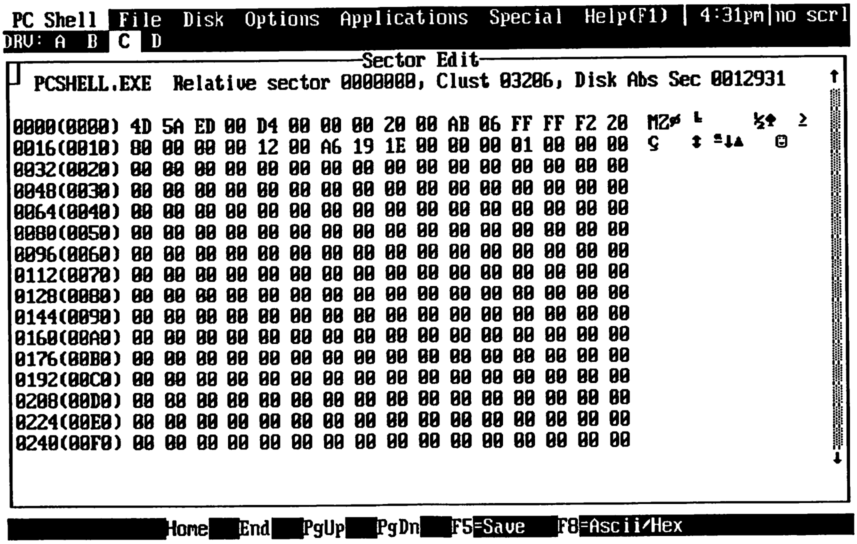
```
MIRROR.FIL verifies OK!
MIRROR.BAK verifies OK!
PCTRACKR.DEL verifies OK!
```

Note: If an error is found in a file with Verify, the File Verify dialog box displays the logical sector that contains the error. You can select to repair the data.



```
AUTOEXEC.BAT has an ERROR in logical sector 0000000
             Using Edit option may enable you to correct errors.
```

3. To repair the sector select **View/Edit** from the File Verify dialog box. The Sector Edit dialog box appears. Select **Verify** to continue verifying files or **Cancel** to terminate the procedure.



```
 PCSHELL.EXE  Relative sector 0000000, Clust 03206, Disk Abs Sec 0012931

0000(0000) 4D 5A ED 00 D4 00 00 00 20 00 AB 06 FF FF F2 20  MZφ ╘    ½♠  ≥
0016(0010) 80 00 00 00 12 00 A6 19 1E 00 00 00 01 00 00 00  Ç  ↕ ═↓▲   ☺
0032(0020) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0048(0030) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0064(0040) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0080(0050) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0096(0060) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0112(0070) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0128(0080) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0144(0090) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0160(00A0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0176(00B0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0192(00C0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0208(00D0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0224(00E0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0240(00F0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

4. Use the Up, Down, Left and Right arrow keys, or scroll if you have a mouse, to move the cursor.
5. Position the cursor over the first byte you want to change. You can edit either the HEX or ASCII bytes by moving the cursor into the HEX or ASCII areas and typing new values.

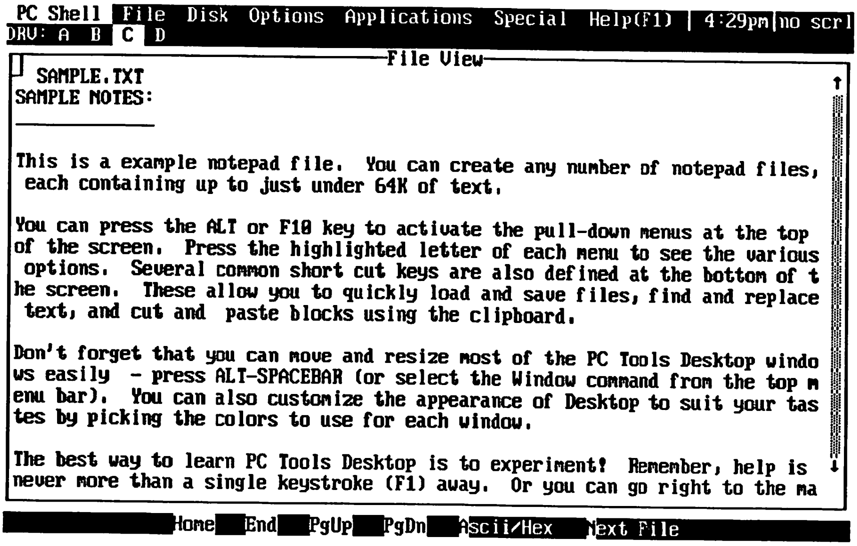
   Note: If you prefer, you may make changes to the ASCII column instead of the HEX column by pressing the **F8** key or clicking on F8=ASCII/Hex. The corresponding values on the HEX column will also change.

6. Type in the new Hexadecimal or ASCII values. They replace the original bytes at the cursor position and will appear in color or highlighted.
7. Select **Save** or press F5 to write the change(s) to the disk or **Esc** if you don't want to make the change(s). Selecting either Save or Esc will return you to the main PC Shell screen.

This procedure makes the sector readable. Unfortunately, some of the information contained in the newly rewritten sector may still be invalid. Once the data is corrupted, complete data recovery is unlikely, but this will recover as much of the data as is possible.

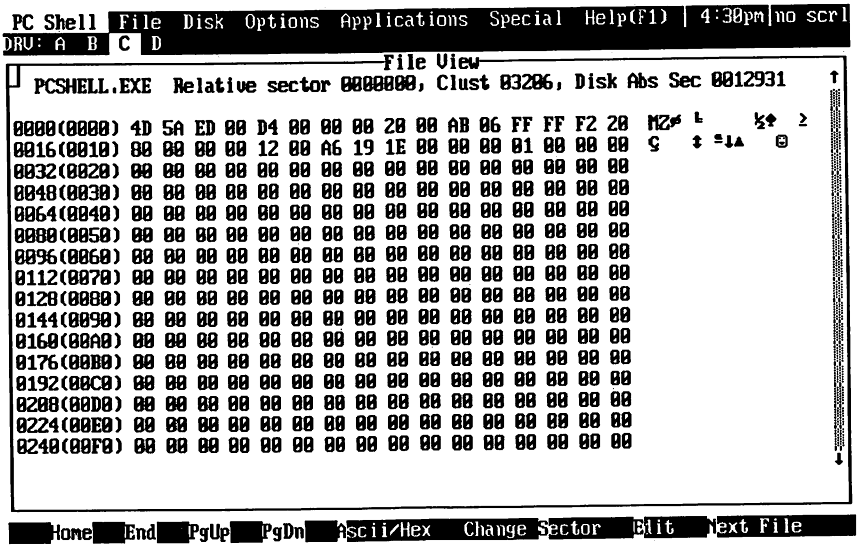
View

View allows you to view any file. If you have a dBASE (or compatible) or Lotus 1-2-3 file selected, the View command displays the file in database or spreadsheet format respectively, and enables you to navigate through and view all the database records or the entire worksheet. If the selected file(s) is not a dBASE or Lotus file, it is viewed in ASCII format if it is a text file:



```
 SAMPLE.TXT
SAMPLE NOTES:

____________

This is a example notepad file.  You can create any number of notepad files,
 each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the top
of the screen.  Press the highlighted letter of each menu to see the various
 options.  Several common short cut keys are also defined at the bottom of t
he screen.  These allow you to quickly load and save files, find and replace
 text, and cut and  paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windo
ws easily  - press ALT-SPACEBAR (or select the Window command from the top m
enu bar).  You can also customize the appearance of Desktop to suit your tas
tes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment!  Remember, help is
never more than a single keystroke (F1) away.  Or you can go right to the ma
```

and in hex format otherwise (see the Hex Edit command for more information):



```
PCSHELL.EXE  Relative sector 0000000, Clust 03206, Disk Abs Sec 0012931

0000(0000) 4D 5A ED 00 D4 00 00 00 20 00 AB 06 FF FF F2 20  MZ╒ ╘    ½♠  ≥
0016(0010) 80 00 00 00 12 00 A6 19 1E 00 00 00 01 00 00 00  Ç   ↕ ▬↓▲   ☺
0032(0020) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0048(0030) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0064(0040) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0080(0050) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0096(0060) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0112(0070) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0128(0080) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0144(0090) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0160(00A0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0176(00B0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0192(00C0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0208(00D0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0224(00E0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0240(00F0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

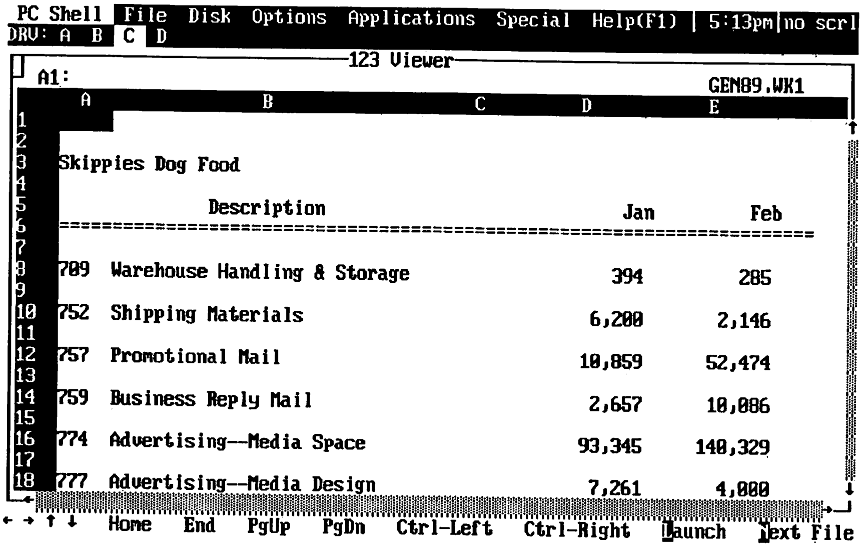
These viewers can be scrolled with the keys shown on the bottom line, the scroll bar, or the right mouse button.

When you have files selected in the File List display, pressing Shift-V allows you to view the file the highlight bar is on instead of the selected file(s).

Lotus 1-2-3 Viewer

Note: The amount of memory available for the spreadsheet file is dependant upon how Shell is run. If the entire file does not fit in memory, scrolling will be slower when disk accesses are necessary. If it is run in Shell mode, it uses all of your available conventional memory. If is is run resident, the amount of memory is dependent upon the setting of the /A parameter (see the section entitled "PC Shell Parameters"). If you know you are going to be viewing many large spreadsheet files, it is recommended that you run in Shell mode or increase the /A parameter in resident mode.

1. Select the 1-2-3 file(s) you want to view. You can easily select all Lotus 1-2-3 files on your drive with the Locate command.
2. Choose **View** from the File pull-down menu, or press V, or click on "View" on the Command Bar. The viewer appears.



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) | 5:13pm|no scrl
DRV: A  B  C  D
                              123 Viewer
  A1:
                                                                   GEN89.WK1
        A                B                    C          D            E
 1
 2
 3 Skippies Dog Food
 4
 5              Description                                  Jan         Feb
 6 ======================================================================
 7
 8 709  Warehouse Handling & Storage                          394         285
 9
10 752  Shipping Materials                                  6,200       2,146
11
12 757  Promotional Mail                                   10,859      52,474
13
14 759  Business Reply Mail                                 2,657      10,086
15
16 774  Advertising--Media Space                           93,345     140,329
17
18 777  Advertising--Media Design                           7,261       4,000
← → ↑ ↓  Home  End  PgUp  PgDn  Ctrl-Left  Ctrl-Right  Launch  Next File
```

3. The commands on the message bar may be selected by clicking on them with the mouse, or you may use the following keys to navigate through your worksheet:

To	Press
Move right one column	Right arrow
Move left one column	Left arrow
Move up one line	Up arrow
Move down one line	Down arrow
Go to the beginning of the worksheet	Home
Go to the end of the worksheet	End
Scroll up one window full	PgUp
Scroll down one window full	PgDn
Scroll left one window full	Ctrl-Left arrow
Scroll right one window full	Ctrl-Right arrow
Launch Lotus 1-2-3 and load the selected file	L
Go to the next file	N

Selecting Launch will automatically run Lotus 1-2-3, load the file being viewed, and display it for you as if you had hotkeyed out of PC Shell, executed Lotus 1-2-3, and loaded the file--only faster and easier.

If Lotus 1-2-3 is not installed on your applications menu, you will not be able to launch. If you used PC Setup to install PC Shell, and

Lotus 1-2-3 is on your disk, it was automatically installed on your applications menu.

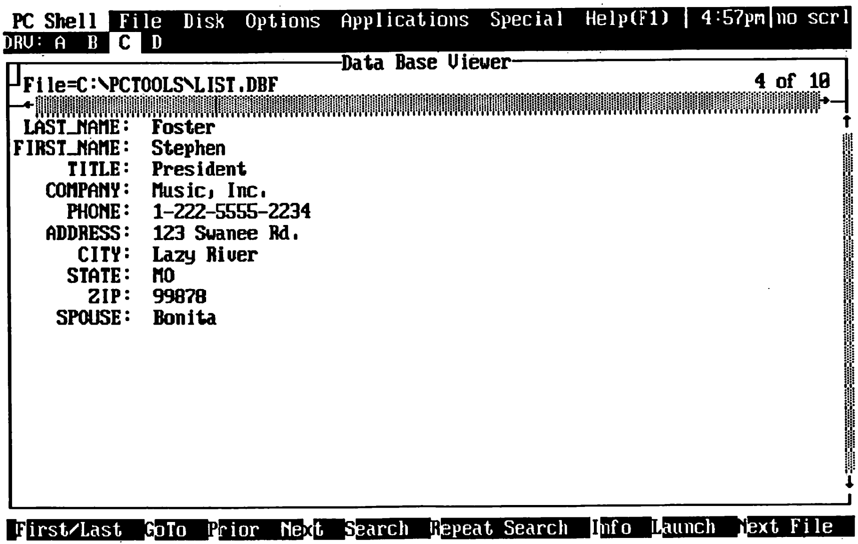
Selecting N (Next File) will let you view the next selected file.

You can also use the mouse to scroll through the worksheet. To navigate horizontally through the columns of your worksheet, press the right mouse button and drag the mouse to the right or left. To navigate vertically through the cells, drag the right mouse up or down. You can also scroll through a worksheet using the horizontal and vertical scroll bars. Scroll bars enable you to position more precisely; for example, positioning the scroll box in the middle of the scroll bar puts you in the middle of the worksheet.

4. To close the 1-2-3 viewer, press Esc, F3, or click on the close box.

Database Viewer

1. Select the database file(s) you want to view. You can easily select all dBASE files on your drive with the Locate command.
2. Choose **View** from the File pull-down menu, or press V, or click on "View" on the Command Bar. The viewer appears.


PC Shell File Disk Options Applications Special Help(F1) 4:57pm no scrl
DRV: A B C D
Data Base Viewer
First/Last GoTo Prior Next Search Repeat Search Info Launch Next File

```
File=C:\PCTOOLS\LIST.DBF                                     4 of 10
 LAST_NAME:  Foster
FIRST_NAME:  Stephen
     TITLE:  President
   COMPANY:  Music, Inc.
     PHONE:  1-222-5555-2234
   ADDRESS:  123 Swanee Rd.
      CITY:  Lazy River
     STATE:  MO
       ZIP:  99878
    SPOUSE:  Bonita
```

3. The commands on the message bar may be selected by clicking on them with the mouse, or you may use the following keys to navigate through the database:

To	Press
Toggle between first and last record	F
Go to a specified record	G
Go to the prior record	P
Go to the next record	X
Search for a character string	S
Repeat the search	R
View database statistics	I
Launch dBASE and load the selected file	L
Go to the next file	N

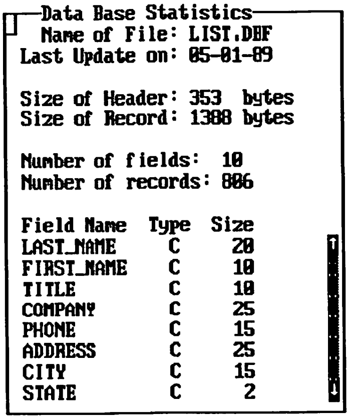
Selecting Launch will automatically run dBASE, load the file being viewed, and display it for you as if you had hotkeyed out of PC Shell, executed dBASE, and loaded the file--only faster and easier.

If dBASE is not installed on your applications menu, you will not be able to launch. If you used PC Setup to install PC Shell, and dBASE is on your disk, it was automatically installed on your applications menu.

Selecting N (Next File) will let you view the next selected file.

The mouse offers you two methods of navigating through the database. You can scroll though the database using the horizontal scroll bar. Scrolling with the vertical scroll bar enables you to scroll through one record in the database. You can also scroll quickly through the records of the database by dragging with the right mouse to the right or left. Dragging the right mouse up or down quickly scrolls the displayed record.

Note: When you select Info (or press I), the following dialog box appears showing you the name of the selected database file, when it was updated last, the size of the header, the size of the record, the number of fields and records, and the field names, types and sizes:



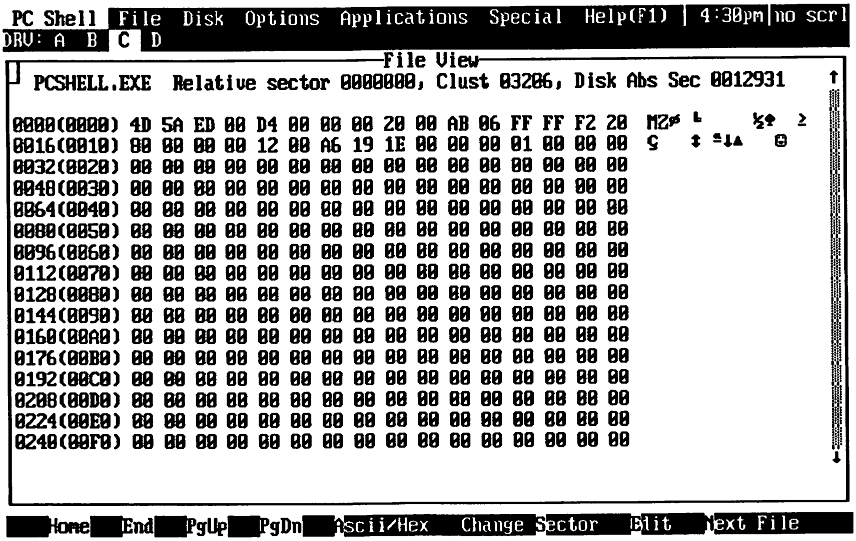
```
Data Base Statistics
  Name of File: LIST.DBF
Last Update on: 05-01-89

Size of Header: 353  bytes
Size of Record: 1300 bytes

Number of fields:  10
Number of records: 806

Field Name  Type  Size
LAST_NAME    C     20
FIRST_NAME   C     10
TITLE        C     10
COMPANY      C     25
PHONE        C     15
ADDRESS      C     25
CITY         C     15
STATE        C      2
```

- Press the Up, Down, PgUp, PgDn, Home or End keys to move through the field names. You can also scroll through the field names using the mouse in the scroll bar. Pressing Esc, F3, or clicking on the close box closes the database statistics box.

4. To close the database viewer, press Esc, F3. or click on the close box.

Hex Edit

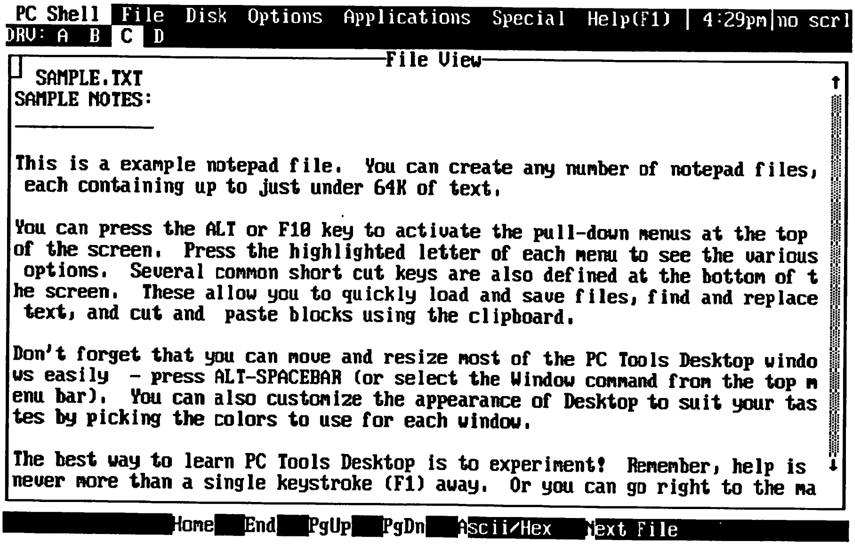
1. Select the file(s) you want to edit.
2. Choose **Hex Edit** from the File pull-down menu, or press X, or click on "HexEdit" on the Command Bar. The hex editor appears.



```
PC Shell File  Disk  Options  Applications  Special  Help(F1) | 4:30pm|no scrl
DRV: A  B  C  D
                                    File View
 PCSHELL.EXE  Relative sector 0000000, Clust 03206, Disk Abs Sec 0012931

0000(0000) 4D 5A ED 00 D4 00 00 00 20 00 AB 06 FF FF F2 20  MZφ ╘   ½♠ ≥
0016(0010) 00 00 00 00 12 00 A6 19 1E 00 00 00 01 00 00 00  Ç  ↕ ═↓▲  ☻
0032(0020) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0048(0030) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0064(0040) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0080(0050) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0096(0060) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0112(0070) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0128(0080) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0144(0090) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0160(00A0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0176(00B0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0192(00C0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0208(00D0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0224(00E0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0240(00F0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

  Home  End  PgUp  PgDn  Ascii/Hex  Change Sector  Edit  Next File
```

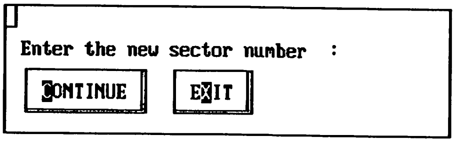
3. Select any of the following commands from the bottom line:

Home: repositions to the beginning of the file displayed.
End: repositions to the end of the file displayed.
PgUp: moves the display several lines backward in the file.
PgDn: moves the display several lines forward in the file.
ASCII/HEX: toggles to the formatted text view. This is useful if the file is a text file.



```
 SAMPLE.TXT
SAMPLE NOTES:

____________

This is a example notepad file.  You can create any number of notepad files,
 each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the top
of the screen.  Press the highlighted letter of each menu to see the various
 options.  Several common short cut keys are also defined at the bottom of t
he screen.  These allow you to quickly load and save files, find and replace
 text, and cut and  paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windo
ws easily  - press ALT-SPACEBAR (or select the Window command from the top m
enu bar).  You can also customize the appearance of Desktop to suit your tas
tes by picking the colors to use for each window.

The best way to learn PC Tools Desktop is to experiment!  Remember, help is
never more than a single keystroke (F1) away.  Or you can go right to the ma
```

Change Sector: allows you to change to a different relative sector in this file, as shown below:



```
Enter the new sector number  :
```

Enter a new sector number. Select **Continue** to change the sector or **Exit** if you don't want to change sectors.

Edit: toggles to the Sector Edit dialog box.
Next File: displays the next selected file.

You can use the scroll bar on the right side of the screen to scroll through the file with the mouse, or the right mouse button can also be used to scroll through the file. Hold down the right mouse button and drag the mouse to the top or bottom to scroll up or down.

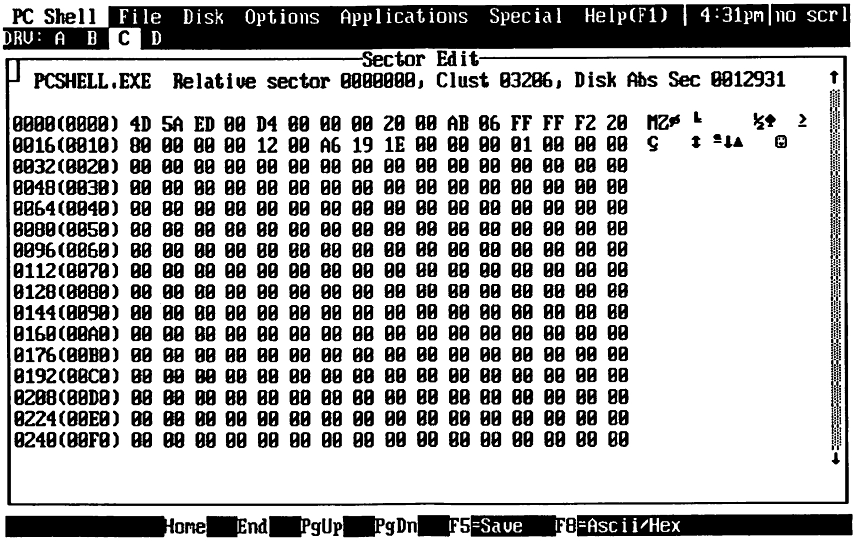
Press Esc, F3, or click on the Close Box to exit to the main PC Shell screen without making any changes.

To Edit a Sector:

A good understanding of hexadecimal, sector bytes, and ASCII values is helpful when using the Edit function. The numbers in the left column are the "offset" or "displacement" numbers of a sector in the file. Each of the 512 bytes of a sector are numbered from 0 to 511 (0000 to 01FF in hexadecimal). The first line shows the first 16 bytes, 0 through 15. The next line shows the next 16 bytes, 16 through 31, etc. The displacement number in the left column indicates how many bytes into the sector each line is (0000, 0016, 0032, etc.). The numbers in parentheses are the same offset numbers in hexadecimal.

The middle column displays 16 bytes of the sector in each line. Each byte is displayed as two-digit hexadecimal numbers. The same 16 bytes are displayed in ASCII values in the right column. Some or all of the ASCII values may appear unreadable. This is because those bytes may be program or data values and were not intended to be displayed as text. The file name, the relative sector, the cluster and the absolute disk sector are also shown on the first line of the dialog box.

1. Select Edit. The Sector Edit dialog box appears.



```
 PCSHELL.EXE  Relative sector 0000000, Clust 03206, Disk Abs Sec 0012931

0000(0000) 4D 5A ED 00 D4 00 00 00 20 00 AB 06 FF FF F2 20
0016(0010) 80 00 00 00 12 00 A6 19 1E 00 00 00 01 00 00 00
0032(0020) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0048(0030) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0064(0040) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0080(0050) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0096(0060) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0112(0070) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0128(0080) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0144(0090) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0160(00A0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0176(00B0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0192(00C0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0208(00D0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0224(00E0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0240(00F0) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

2. Use the Up, Down, Left and Right arrow keys, or scroll if you have a mouse, to move the cursor.

3. Position the cursor over the first byte you want to change. You can edit either the HEX or ASCII bytes by moving the cursor into the HEX or ASCII areas and typing new values.

   Note: If you prefer, you may make changes to the ASCII column instead of the HEX column by pressing the **F8** key or clicking on F8=ASCII/Hex. The corresponding values on the HEX column will also change.

4. Type in the new Hexadecimal or ASCII values. They replace the original bytes at the cursor position and will appear in color or highlighted.
5. Select **Save** or press F5 to write the change(s) to the disk or **Esc** if you don't want to make the change(s). Selecting either Save or Esc will return you to the File View dialog box.

To Repair a Bad Sector:

Edit can often be used to fix a bad sector. To proceed with a repair, do the following:

1. From the File View dialog box select **Edit**.
2. Select **Save** to rewrite the same sector information, without the error, back to the disk.

This procedure makes the sector readable. Unfortunately, some of the information contained in the newly rewritten sector may still be invalid. Once the data is corrupted, complete data recovery is unlikely, but this will recover as much of the data as is possible.

Attribute Change

The **Attribute Change** command allows you to change file attributes of the selected files as well as the date and time of the file(s).

The Available Attributes

Read Only (R) protects the file by allowing you to only read the file. You may not make any changes to the file or delete it.

Hidden (H) makes the file "invisible" so that it is not listed when you enter the DOS directory command. PC Shell, however, will display hidden files.

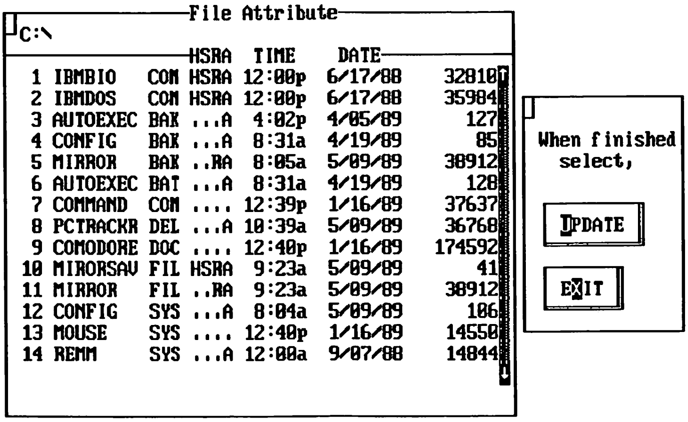
System (S) makes the system file "invisible" so that it is not listed when you enter the DOS directory command.

Archive (A) is used by the DOS Backup and PC Backup programs to determine which files to back up. Whenever you make a change to a file, DOS sets its Archive bit, meaning the file has changed and should be backed up during the next backup session.

Warning: You should not change the attributes of copy-protected files or system files. Changing these attributes can result in programs not running or your hard disk not booting.

To Change Attributes or Date/Time:

1. Select the subdirectory that contains the file(s) whose attributes or date and times you want to change.
2. Select the file(s) you whose attributes or date and time you want to change.
3. Choose **Attribute Change** from the File pull-down menu. PC Shell displays the File Attribute dialog box.



```
                    File Attribute
C:\
                    HSRA  TIME    DATE
 1 IBMBIO    COM HSRA 12:00p 6/17/88    32810
 2 IBMDOS    COM HSRA 12:00p 6/17/88    35984
 3 AUTOEXEC  BAK ...A  4:02p 4/05/89      127
 4 CONFIG    BAK ...A  8:31a 4/19/89       85
 5 MIRROR    BAK ..RA  8:05a 5/09/89    38912
 6 AUTOEXEC  BAT ...A  8:31a 4/19/89      128
 7 COMMAND   COM .... 12:39p 1/16/89    37637
 8 PCTRACKR  DEL ...A 10:39a 5/09/89    36768
 9 COMODORE  DOC .... 12:40p 1/16/89   174592
10 MIRORSAV  FIL HSRA  9:23a 5/09/89       41
11 MIRROR    FIL ..RA  9:23a 5/09/89    38912
12 CONFIG    SYS ...A  8:04a 5/09/89      106
13 MOUSE     SYS .... 12:40p 1/16/89    14550
14 REMM      SYS ...A 12:00a 9/07/88    14844
```

When finished select,

The following information is displayed:

File name and extension

Attributes:
H means hidden file.
S means system file.
R means read-only file.
A means the archive bit is set.

Time/Date: the file's current time and date.

Size: the file size.

4. To move around in the Attribute dialog box, use the Up, Down, Left and Right arrow keys. You may also use the Scroll bars or the mouse to move to the desired file.

Note: When changing attributes or time and dates, select the appropriate change key and the down arrow key to make changes quickly to a list of files.

To Change File Attributes:

Mouse

- Click on the attribute letter to toggle the attribute on or off.

Keyboard

- Use the arrow keys to select the attribute to change and then press the A, H, S or R keys to toggle the selected attribute on. Pressing the A, H, S or R keys again will toggle the attribute off.

To Change the Time and Date:

1. Move to the Date or Time field with the arrow keys or mouse.

2. Type the new date or time in the appropriate field. Dates must be entered as two digits; for example, March would be entered as 03.

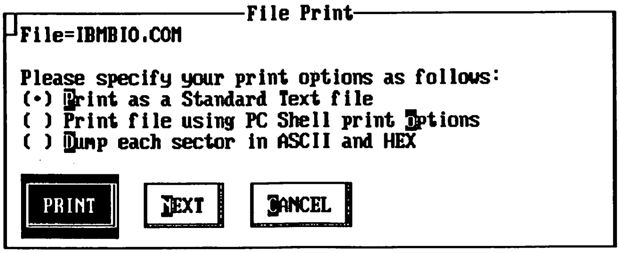
To Dismiss the Dialog Box:

- Select **Update** to save the changes to disk or **Exit** to cancel your attribute changes and return to the main PC Shell screen.

Print File

The Print File command allows you to print the contents of a file or multiple files to LPT1. (If you want to print directory listings, use the List command on the File pull-down menu.)

1. Select the file(s) to print.
2. Choose **Print File** from the File pull-down menu, or press P, or click on "Print" on the Command Bar. The File Print dialog box displays the following print options:



```
File=IBMBIO.COM

Please specify your print options as follows:
(•) Print as a Standard Text file
( ) Print file using PC Shell print Options
( ) Dump each sector in ASCII and HEX
```

Print as a Standard Text File: prints a standard ASCII character text file.

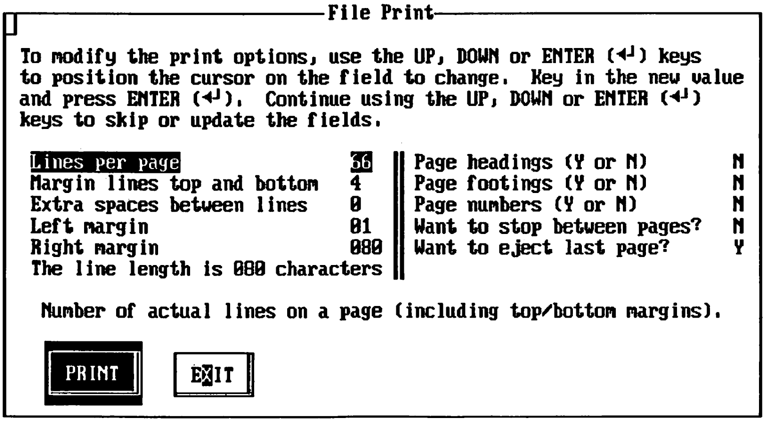
Print file using PC Shell print options: lets you define the page layout for printing and then prints a standard text file.

Dump each sector in ASCII and HEX: prints sectors in both hexadecimal and ASCII format.

3. Select the print option and **Print** to proceed. If multiple files were selected, you may skip to the next file by selecting **Next**, or to quit and return to the main PC Shell screen, select **Exit**.

To Print Using the Print Options:

If you selected "Print file using PC Shell print options" from the previous File Print dialog box, the following dialog box appears:



```
To modify the print options, use the UP, DOWN or ENTER (↵) keys
to position the cursor on the field to change. Key in the new value
and press ENTER (↵). Continue using the UP, DOWN or ENTER (↵)
keys to skip or update the fields.

Lines per page                66  ║ Page headings (Y or N)        N
Margin lines top and bottom   4   ║ Page footings (Y or N)        N
Extra spaces between lines    0   ║ Page numbers (Y or N)         N
Left margin                   01  ║ Want to stop between pages?   N
Right margin                  080 ║ Want to eject last page?      Y
The line length is 080 characters ║

 Number of actual lines on a page (including top/bottom margins).
```

1. Press the arrow keys or click on the appropriate option to modify any of the following Print formatting options. A description of each option is displayed as it is selected.

Lines per page: specifies the actual number of lines on a page.

Margin lines top and bottom: specifies the number of lines for top and bottom margins.

Extra spaces between lines: specifies the number of blank lines to leave between each printed line.

Left Margin: specifies the first print position of a line.

Right Margin: specifies the last print position of a line.

Page headings: prints a heading on each page. This will prompt you to enter the header text.

Page footings: prints a footer on each page. This will prompt you to enter the footer text.

Page numbers: numbers each page.

Stop between pages: used for printing single sheets.

Eject last page: eject last page printed.

2. Enter the new value.
3. When finished changing the Print Options, select **Print** to start printing or **Exit** to return to the main PC Shell screen.

   PC Shell prints the first file selected and returns to the File Print dialog box for each subsequent file to be printed.

Print Directory

The Print Directory command prints a file list for a selected subdirectory.

1. Select the directory you want to print the file list for.
2. Choose **Print Directory** from the File pull-down menu.

   PC Shell informs you that printing is in progress.

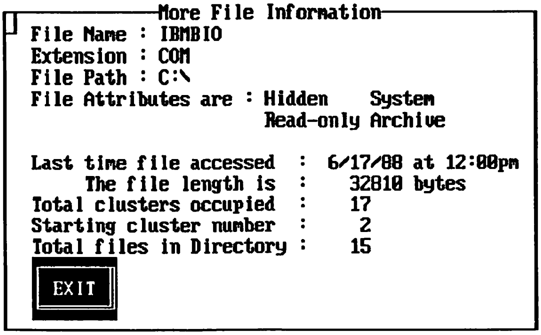
Note: You may change which files to print by using the File Display Options from the Options pull-down menu. See the File Display Option section for more information.

PC Shell prints the file names, size, number of disk clusters, date, time and attributes for the files in the selected directory, then returns you to the main PC Shell screen.

More File Info

The More File Info command gives you specific information about a file. You may select multiple files for analysis.

1. Select the file(s) you want information about.
2. Choose **More File Info** from the File pull-down menu. The More File Information dialog box appears, displaying the following file information:



```
More File Information
File Name : IBMBIO
Extension : COM
File Path : C:\
File Attributes are : Hidden    System
                      Read-only Archive

Last time file accessed  :  6/17/88 at 12:00pm
     The file length is  :    32810 bytes
Total clusters occupied  :    17
Starting cluster number  :     2
Total files in Directory :    15
```

3. If more than one file was selected, select **Next** to display information about the next file. Selecting **Exit** returns you to the main PC Shell screen.

File Edit

A file editor (or text editor) has been included in PC Shell, which allows you to create and edit documents, even within other running programs. Normally, we recommend that you use Notepads in Desktop as your file editor since it is a much more robust editor, but for editing files, the PC Shell file editor is quick and easy.

Unlike many file editors, the PC Shell's editor will only keep a limited section of the file you are editing in memory at a time -- the rest is stored in a temporary "spillfile" on the disk. This allows you to edit large documents even in resident mode without previously allocating extra memory to PC Shell.

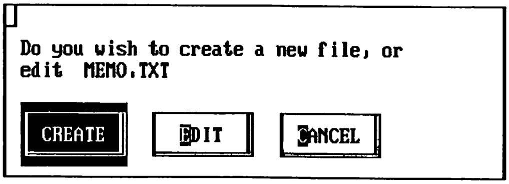
To Start the File Editor:

1. Select the file you want to edit.
2. Choose **File Edit** from the File pull-down menu, or press E, or click on "FileEdit" on the Command Bar.

or

- If you want to create a new file, just choose **File Edit** from the File menu, or press E, or click on "FileEdit" on the Command Bar–it doesn't matter where the highlighted bar is.

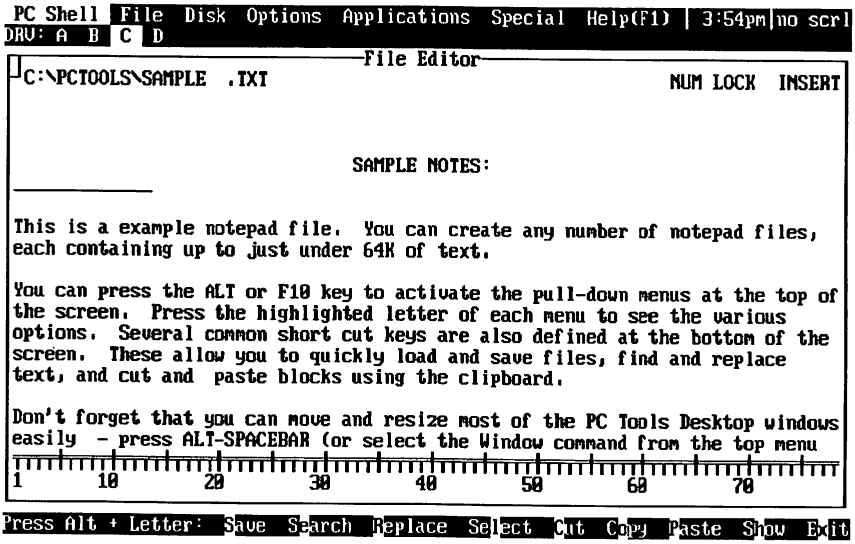
  PC Shell displays a dialog box asking you to confirm your decision to edit this file, create a new file, or Cancel.



Do you wish to create a new file, or edit MEMO.TXT

3. If you want to edit the file you selected earlier, choose **Edit**. To create a new file, choose **Create** (you will be asked to supply the file name when you exit the file editor).

   The Editor's screen appears with the available commands documented on the bottom line.



PC Shell File Disk Options Applications Special Help(F1) | 3:54pm | no scrl
DRV: A B C D
File Editor
C:\PCTOOLS\SAMPLE .TXT
NUM LOCK INSERT

SAMPLE NOTES:

This is a example notepad file. You can create any number of notepad files, each containing up to just under 64K of text.

You can press the ALT or F10 key to activate the pull-down menus at the top of the screen. Press the highlighted letter of each menu to see the various options. Several common short cut keys are also defined at the bottom of the screen. These allow you to quickly load and save files, find and replace text, and cut and paste blocks using the clipboard.

Don't forget that you can move and resize most of the PC Tools Desktop windows easily - press ALT-SPACEBAR (or select the Window command from the top menu

1 10 20 30 40 50 60 70
Press Alt + Letter: Save Search Replace Select Cut Copy Paste Show Exit

To Edit:

Use the following keys to edit.

To	Press
Insert a character at the cursor	A character
Insert a space at the cursor	Spacebar
Insert a tab at the cursor	Tab
Insert a paragraph at cursor	Enter
Delete a character under the cursor	Delete
Erase a character to the left of the cursor	Backspace
Move cursor up one line	Up arrow key
Move cursor down one line	Down arrow key
Move cursor left one character	Left arrow key
Move cursor right one character	Right arrow key
Move to the beginning of the line	Home
Move to the end of the line	End
Move to the beginning of the file	Ctrl - Home
Move to the end of the file	Ctrl - End
Move to the beginning of a window	Home twice
Move to the end of a window	End twice
Scroll text up one window	PgUp
Scroll text down one window	PgDn

Selecting Commands

The available editing commands can be found on the bottom line. Press the Alt key along with the highlighted letter of the command you want to use. For example, pressing Alt-S saves the file. You can also click on the commands with the mouse to select them.

Adding and Editing Text

To add text, just type – the file editor automatically wraps words around on the screen for you. The only time you need to press the Enter key is to end a paragraph. If you want to edit existing text, use the editing keys described above.

The file editor normally comes up in Insert mode. This means any new text typed is inserted into the document at the cursor position. If you are editing and want the new text to overtype existing text, press the Ins (insert) key first. The Ins key toggles the file editor between Insert and Overtype modes. When the INS indicator is shown on the bottom of the screen, you are in Insert mode.

The Tab key works just like the Tab key on a typewriter: it will move the cursor to the next tab position on the page. Tabs are pre-set in the PC Shell file editor to every ninth position across the screen.

Press the Esc key, choose the Exit command, or click on the Close box to exit the file editor. If you have made any changes, a dialog box appears asking you to confirm that you want to exit without saving. This is to prevent you from accidentally pressing the Esc key and losing the document. If you have created a new document, a dialog box will appear asking you to specify the new file name.

Cutting and Pasting Text

The file editor has four commands that help you work with blocks of text. They are Select, Cut, Copy, and Paste. Here's how they work:

To Select a Block of Text:

In Select mode, when you move through your document with the cursor keys, the text is highlighted. The highlight always starts at the cursor position.

1. Choose the **Select** command to put the file editor in Select mode.

   For example, to select a paragraph, move to the beginning or end of the paragraph and then choose **Select.**

2. Press the Up, Down, Right or Left arrow keys.
   Each time you press the Up/Down arrow keys, another line is highlighted (selected). Each time you press the Left/Right arrow keys, another character is selected. If you press the Page Up/Down keys, a page of text is selected.

Note: If you want to undo selected text, choose **Select** again and you will exit Select mode.

To Cut Text:

When you have selected all the text you want to delete or move somewhere else, use the Cut command.

- Choose **Cut** to delete all the text you have selected. This puts the text into the invisible Paste buffer so you can insert (paste) it somewhere else in your document.

To Copy Text:

If you want to leave the selected text where it is, but you want to make a copy of it to put somewhere else in your document, use the Copy command.

- Choose **Copy.** Copy works just like Cut except the selected text is not deleted: it is only copied into the Paste buffer.

To Paste Text:

The Paste buffer contains the text you have selected, then cut or copied. To paste the contents of the Paste buffer into your document, do the following:

1. Use the arrow keys or mouse to move to where you would like to insert the text. Notice that choosing **Cut** or **Copy** automatically takes you out of Select mode.
2. When the cursor is at the point to insert the text, choose **Paste** and the text will appear.

Note: The Paste buffer will only hold the last cut or copied text. If you want to move two different sections of your document, you need to move them one at a time. Choosing **Cut** or **Copy** will remove any existing text in the Paste buffer and insert the next text.

Searching for and Replacing Text

If you want to find a particular text string or replace it, you can use the Search and Replace commands.

To Find a Character String:

- Choose **Search**. A dialog box appears asking you to enter the character string you want to search for. Press Enter to start the search. Once the character string has been found, you can press S, or click on "Search" on the bottom line to repeat the search, or Esc (or press X or click on "Exit") to cancel.

To Replace a Character String:

- Choose **Replace**. Dialog boxes appear asking you to enter the characters you want to replace and the characters you want to replace them with. Press Enter to start. When the characters are found, the editor stops so you can replace each occurrence of the text. Press R or click on "Replace" to replace the text or Esc (or press X or click on "Exit") to cancel.

Showing Carriage Returns

Choose the **Show** command to see where carriage returns are in your text.

Saving Text

You can save your work as you type by choosing the **Save** command.

Exiting the File Editor

When you are ready to exit the file editor, press the Esc key, or click on the close box with the mouse, or choose the Exit button. PC Shell then displays a dialog box asking you to confirm that you want to save before leaving. Every time you save, PC Shell renames the previous version of your document, giving it the .BAK extension, so if you ever want to undo your work, you can edit your old file.

Printing

You can also format and print the documents you created and edited using PC Shell's file editor. Use the Print File command found on the File menu. To print your text, exit out of the file editor with the Esc key after saving your document, select the file you want to print, and choose the Print File command from the File menu. You can also print documents using Notepads in Desktop.

For more information on formatted printing, please refer to the section entitled "Print File."

Run

The Run command executes a selected file or program. After the program is run, you will be returned to PC Shell. PC Shell will free up almost all of the memory it is using so it will be available for the program you want to run.

Note: Files can be run only if PC Shell was executed from the DOS prompt. If PC Shell was hotkeyed into from another program or selected from the PC Tools Desktop menu, files will not run. To run a program in Shell mode, see "Starting PC Shell in shell mode" at the beginning of this chapter.

The Quick Run command will be available on the Options pull-down menu when you are running PC Shell in Shell mode. If you are running PC Shell memory resident, this command will not appear on the menu.

The Quick Run command works as follows: When ON, PC Shell does not free up memory prior to running an application (either from the Applications Menu or by double-clicking on a file name). Also, the memory will not be freed when you select DOS from the File menu. Memory is freed when you leave PC Shell with the Exit command.

PC Shell takes about 200K of memory when active as a DOS Shell. As long as the programs you want to run do not use all of your available memory, the Quick Run command allows them to be run faster since no memory swapping takes place prior to running them. If your programs won't run or you don't have enough memory to load a large data file, choose the Quick Run command again to turn the setting OFF. The memory is freed prior to running your application. There will be a slight pause before the application is run, but nearly all of your computer's memory will be available to the program.

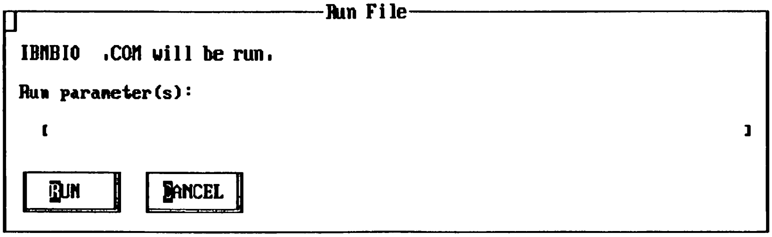
1. Select the file or program you want to run.

   Note: You can only run those files or programs with extensions of .EXE, .COM, or .BAT unless the File Extension Associations option is selected in the Modify Applications List. Please see "Modify Applications List" in the Options menu section for more information.

2. Choose **Run** from the File pull-down menu, or press **Ctrl - Enter**, or double click on the file with the mouse. The Run File dialog box appears with the file or program name displayed. You will be prompted to enter any optional parameters that may be required by the selected program. Once the parameters have been entered, select **Run** to proceed or **Cancel** to return to PC Shell.

   Note: Parameters are optional switches that some programs require to run correctly. PC Shell does not require that you enter parameters, but the program you want to run may. Please check your program manual for additional information concerning any optional start-up switches.

   An example of using optional parameters is running PC Backup from PC Shell. You can have several named backup types, like "daily" or "weekly." You can enter "daily" as a run parameter and PC Backup will automatically run the daily backup for you.



IBMBIO .COM will be run.

Run parameter(s):

[ ]

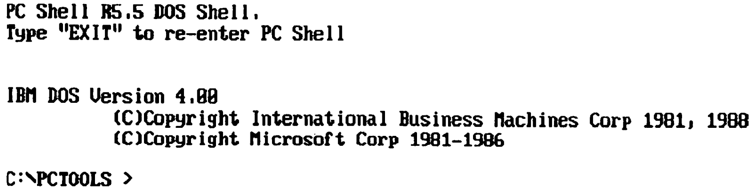
You can also put all your most commonly used programs into an Application list and they can be run using a single keystroke from PC Shell. See the section entitled "Modify Applications List" for more information.

DOS

Note: This option is only available when PC Shell is in non-resident (Shell) mode. When you have installed PC Shell resident, the word "unavailable" is next to the DOS command on the pull-down menu.

The DOS command allows you to temporarily leave PC Shell and run a secondary DOS command line processor. PC Shell can be re-entered by typing EXIT at any DOS prompt. PC Shell will free up most of its memory while at the DOS command processor, so large applications can be run.

- Choose **DOS** from the File pull-down menu or type **Shift- F9.**



```
PC Shell R5.5 DOS Shell.
Type "EXIT" to re-enter PC Shell


IBM DOS Version 4.00
        (C)Copyright International Business Machines Corp 1981, 1988
        (C)Copyright Microsoft Corp 1981-1986

C:\PCTOOLS >
```

The Quick Run command will be available on the Options pull-down menu when you are running PC Shell in Shell mode. If you are running PC Shell memory resident, this command will not appear on the menu.

When the Quick Run command is ON, PC Shell does not free up memory prior to running the DOS command line processor. Memory is freed when you leave PC Shell with the Exit command.

PC Shell takes about 200K of memory when active as a DOS Shell. As long as the programs you use while in the secondary command line processor do not need all of your available memory, the Quick Run command allows the DOS command line processor to be started much faster since no memory swapping takes place prior to running it. If your programs won't run or you don't have enough memory to load a large data file, return to PC Shell by typing "EXIT" and choose the Quick Run command again to turn the setting OFF. The memory is freed prior to running the secondary command line processor. There will be a slight pause before it is run, but nearly all of your computer's memory will be available.

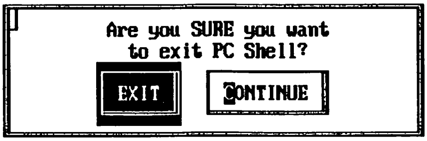
To Return to PC Shell from DOS:

- Type EXIT from any DOS prompt.

Note: Do not load terminate & stay resident programs (TSRs) while running a secondary command processor.

Exit PC Shell

1. Choose **Exit PC Shell** from the File pull-down menu, press the **F3** key, or click on "F3Exit" on the Message Bar. This will bring up the Exit dialog box.

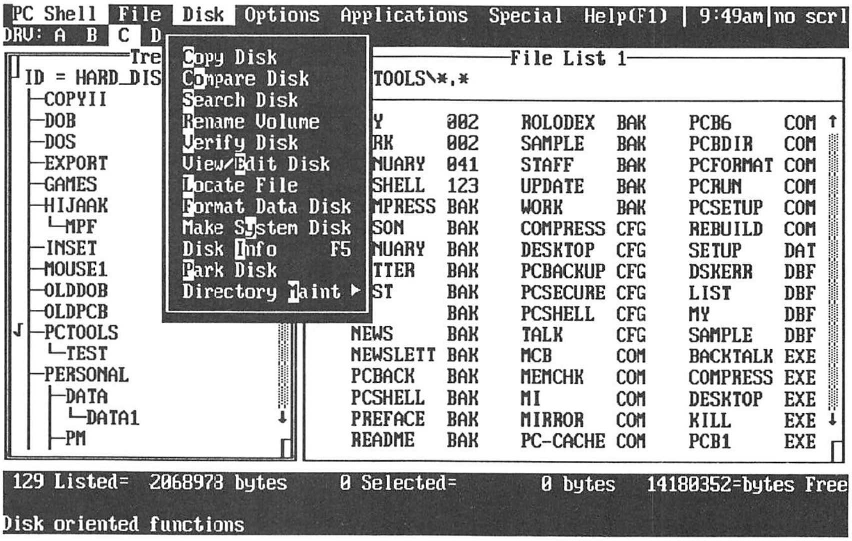


Are you SURE you want to exit PC Shell?

2. Select **Exit** and return to DOS. Select **Continue** to remain in PC Shell.

The Disk Menu

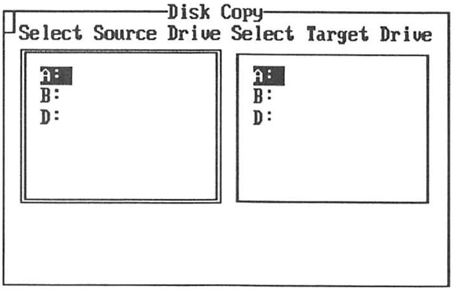
Choosing **Disk** from the horizontal menu bar displays the Disk pull-down menu.



Copy Disk

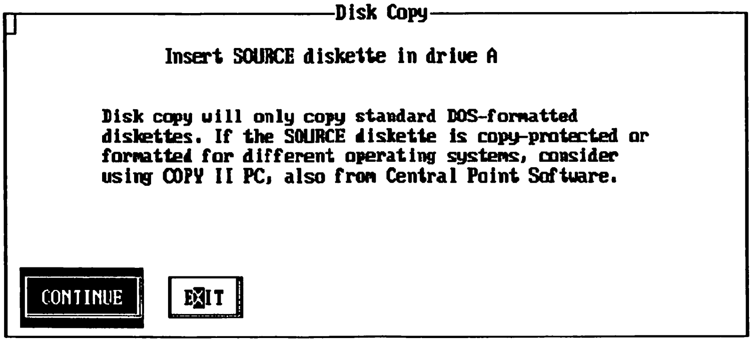
The Copy Disk command copies standard DOS formatted floppy diskettes. Copy Disk will format the target disk as it copies so it will not have to be pre-formatted.

1. Choose **Copy Disk** from the Disk pull-down menu. PC Shell displays the Disk Copy dialog box.



Note: Both the Source and Target drives must be the same drive and media type.

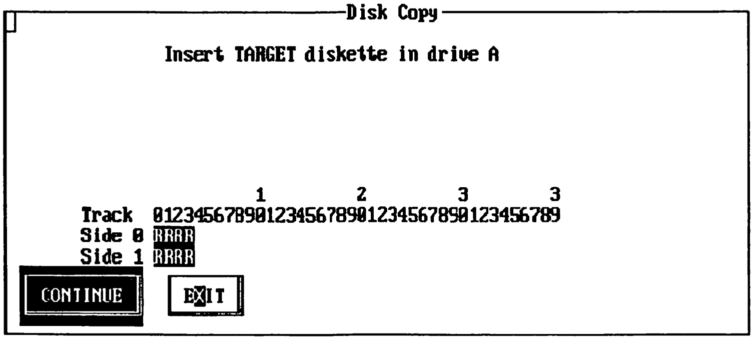
2. Insert the Source disk in the appropriate drive. To proceed, press the Tab key to move the highlight from the source drive to the target drive.
3. Select both the Source and Target drives by pressing the drive letters or clicking on the drive letters with the mouse, or press Esc to end the copy process.
4. The Disk Copy dialog box appears showing the status of the copy process.



Insert SOURCE diskette in drive A

Disk copy will only copy standard DOS-formatted diskettes. If the SOURCE diskette is copy-protected or formatted for different operating systems, consider using COPY II PC, also from Central Point Software.

You will be prompted, if necessary, to insert the Target disk. Select **Continue** to proceed or **Exit** to end the copy process.



Insert TARGET diskette in drive A

```
                 1         2         3        3
Track  0123456789012345678901234567890123456789
Side 0 RRRR
Side 1 RRRR
```

The following letters will be displayed during the copy process. If a dot appears in the track status window, that track has been copied successfully.

F: Formatting track
R: Reading track
W: Writing track

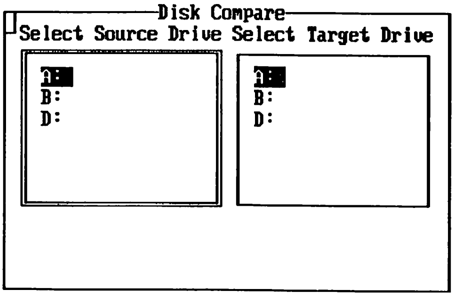
When the copy is complete, PC Shell will return you to the main PC Shell screen.

Note: If you use PC Shell in resident mode to make disk copies frequently, and you only have a single disk drive, you may want to start PC Shell with more memory. For example, try starting PC Shell with /RL. This won't take any more memory when PC Shell is not active, but will allow it to use more memory for disk copies, which will minimize disk swapping.

Compare Disk

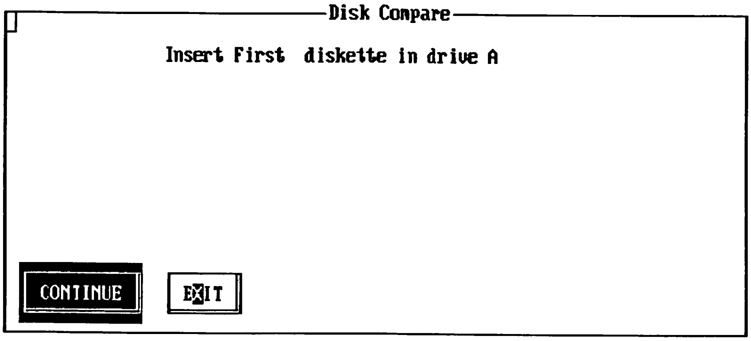
The Compare Disk command compares standard DOS formatted floppy diskettes.

1. Choose **Compare Disk** from the Disk pull-down menu. PC Shell displays the Compare Disk dialog box.



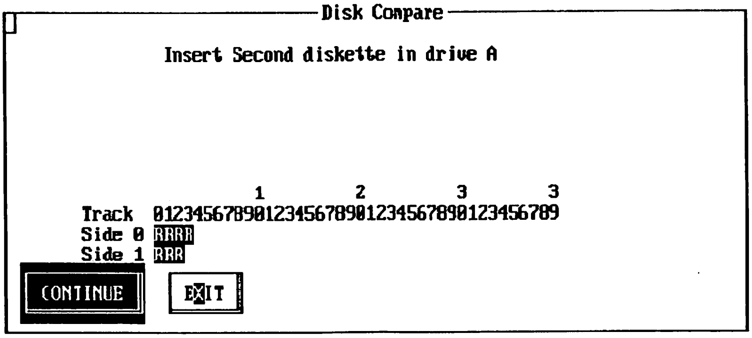
Note: Both the Source and Target drives must be the same drive and media type.

2. Insert the Source disk in the appropriate drive.
3. To proceed, press the Tab key to move the highlight from the source drive to the target drive.
4. Select the Source and Target drives by pressing on the drive letters or clicking the drive letters with the mouse, or press Esc to end the compare process. The Disk Compare dialog box will come up showing the status of the compare process.



Insert First diskette in drive A

5. You will be prompted to insert the Target disk. Select **Continue** to proceed or **Exit** to end the Compare process.



```
Disk Compare
                    Insert Second diskette in drive A

                     1         2         3         3
Track    0123456789012345678901234567890123456789
Side 0   RRRR
Side 1   RRR
```

Note: The following letters will be displayed during the compare process. If a dot appears in the track status window, that track has been compared successfully.

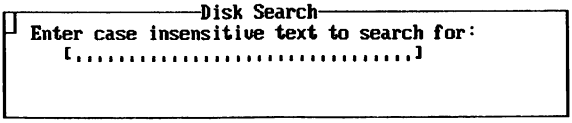
R: Reading track
C: Comparing track

6. Select **Exit** when you are done to return to the main PC Shell screen.

Search Disk

Search Disk will scan the selected disk for a certain character string. Once it is found, it may be viewed or edited.

1. Choose **Search Disk** from the Disk pull-down menu. The Disk Search dialog box appears:



```
Disk Search
 Enter case insensitive text to search for:
    [..............................]
```

2. To search for a string of ASCII characters, type in the desired characters on the ASCII line. This type of search will not be case sensitive.

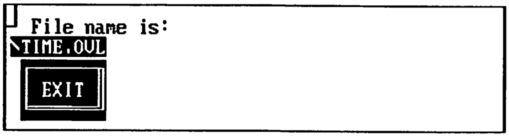
- To search for HEX values, press F9 to select **HEX** mode and type the desired string as HEX values. This type of search is case sensitive. If you enter invalid hex values, PC Shell notifies you with a beep.

Remember: The ASCII search is NOT case sensitive. That is, you can enter text in any combination of upper or lower case letters. If a HEX string is entered, an EXACT MATCH is done. The maximum size of a search string is 32 characters.

3. Press Enter to start the search. When PC Shell finds the matching bytes, it displays the following options on the bottom line:

   Continue Disk Search: continues searching the disk for the matching bytes.

   Show Filename: displays the following dialog box showing the file name of the matching sector.



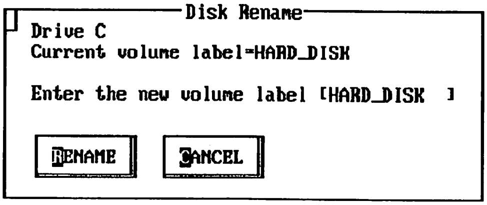
```
File name is:
\TIME.OVL
```

   Edit Sector: enters the edit mode. The Sector Edit dialog box appears with the cursor on the first byte of the matching string. Using the Sector Edit you can edit or view sectors with the HEX/ASCII display. See the Hex Edit command in the File menu section for information on editing a sector.

Rename Volume

The Rename Volume command allows you to rename a disk volume label.

1. Select the drive you want to rename from the drive command line.
2. Choose **Rename** from the Disk pull-down menu The Disk Rename dialog box appears.



```
Disk Rename
Drive C
Current volume label=HARD_DISK

Enter the new volume label [HARD_DISK  ]
```

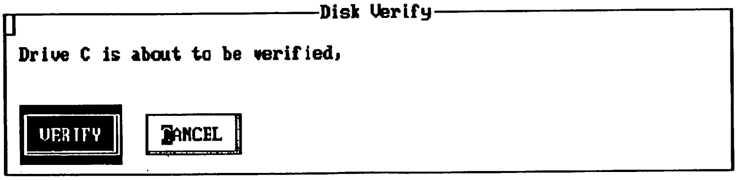
3. Enter the new volume label name and select **Rename** to proceed. Select **Cancel** to end the rename process.

Verify Disk

The Verify Disk command allows you to verify that all of the data on your disk is readable. This data includes files, subdirectories, and unused space.

Note: Verify Disk works only with DOS formatted disks which are not copy-protected. Verify Disk does not work on unformatted disks since there's no data to verify.

1. Select the drive you want to verify from the drive command line.
2. Choose **Verify Disk** from the Disk pull-down menu.
3. Select **Verify** to begin verifying. The Disk Verify dialog box appears.



Drive C is about to be verified.

If PC Shell finds a bad sector that has not been previously marked by DOS, it displays the sector number containing the error. PC Shell will also indicate whether the sector is part of the DOS system area, part of an existing file, or available for use.

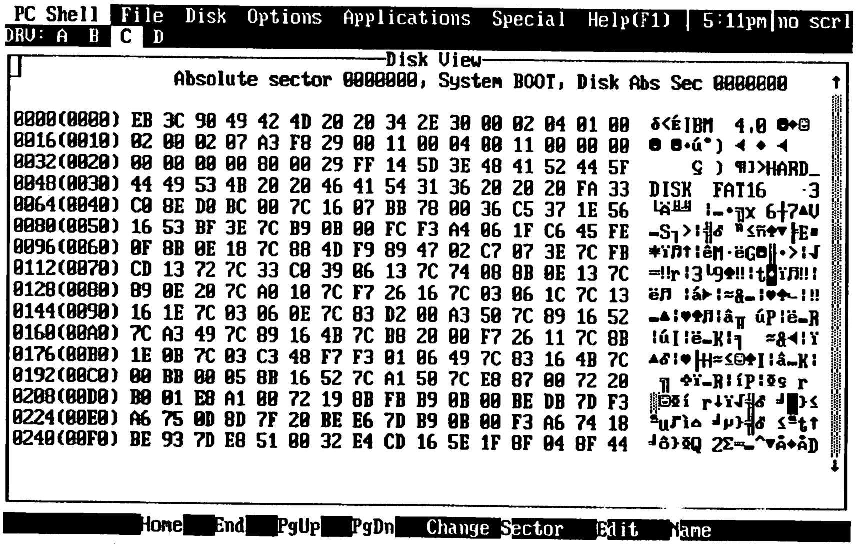
If the sector is available, PC Shell marks the sector as bad to prevent its future use. If the bad sector is already allocated to a file or subdirectory, PC Shell displays a message recommending that you run the Compress "Surface Scan" option which will attempt to move the data to a safe area of the disk.

To return to the main PC Shell screen, select **Exit.**

View/Edit Disk

The View/Edit disk command allows you to view the contents of any sector on the disk, whether or not it is part of a file. Once the sector is displayed, you can optionally make changes to it. A good understanding of hexadecimal, sector bytes, and ASCII is helpful when using View/Edit.

1. Select the drive you want to view or edit from the Drive Command Line.
2. Choose **View/Edit Disk** from the Disk pull-down menu. The Disk View/Edit dialog box is displayed with the Absolute sector number, System area or Cluster number and the Disk Absolute sector number displayed at the top of the screen.



```
Absolute sector 0000000, System BOOT, Disk Abs Sec 0000000

0000(0000) EB 3C 90 49 42 4D 20 20 34 2E 30 00 02 04 01 00  δ<ÉIBM  4.0 ☻♦☺
0016(0010) 02 00 02 07 A3 F8 29 00 11 00 04 00 11 00 00 00  ☻ ☻•ú°) ◄ ♦ ◄
0032(0020) 00 00 00 00 80 00 29 FF 14 5D 3E 48 41 52 44 5F      Ç ) ¶]>HARD_
0048(0030) 44 49 53 4B 20 20 46 41 54 31 36 20 20 20 FA 33  DISK  FAT16   ·3
0064(0040) C0 8E D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1E 56  └Ä╨╝ |▬•╗x 6┼7▲V
0080(0050) 16 53 BF 3E 7C B9 0B 00 FC F3 A4 06 1F C6 45 FE  ▬S┐>|╣♂ ⁿ≤ñ♠▼╞E■
0096(0060) 0F 8B 0E 18 7C 88 4D F9 89 47 02 C7 07 3E 7C FB  ☼ïÄ↑|êM·ëG☻╟•>|√
0112(0070) CD 13 72 7C 33 C0 39 06 13 7C 74 08 8B 0E 13 7C  ═‼r|3└9♠‼|t◘ïÄ‼|
0128(0080) 89 0E 20 7C A0 10 7C F7 26 16 7C 03 06 1C 7C 13  ëÄ |á►|≈&▬|♥♠∟|‼
0144(0090) 16 1E 7C 03 06 0E 7C 83 D2 00 A3 50 7C 89 16 52  ▬▲|♥♠Ä|â╥ úP|ë▬R
0160(00A0) 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B  |úI|ë▬K|╕  ≈&◄|ï
0176(00B0) 1E 0B 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C  ▲♂|♥├H≈≤☺♠I|â▬K|
0192(00C0) 00 BB 00 05 8B 16 52 7C A1 50 7C E8 87 00 72 20   ╗ ♣ï▬R|íP|Φç r
0208(00D0) B0 01 E8 A1 00 72 19 8B FB B9 0B 00 BE DB 7D F3  ░☺Φí r↓ï√╣♂ ╛█}≤
0224(00E0) A6 75 0D 8D 7F 20 BE E6 7D B9 0B 00 F3 A6 74 18  ªu♪ì⌂ ╛µ}╣♂ ≤ªt↑
0240(00F0) BE 93 7D E8 51 00 32 E4 CD 16 5E 1F 8F 04 8F 44  ╛ô}ΦQ 2Σ═▬^▼Å♦ÅD
```

On a hard disk, the sector size is usually a multiple of 512 bytes, but may vary from drive to drive. The View/Edit display shows 256 bytes, or half a sector, on the screen at a time.

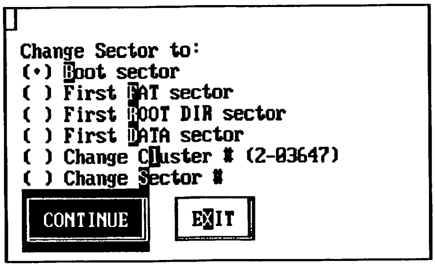
The numbers in the left column are "offset" or "displacement" numbers which indicate the position within the sector. Each of the 512 bytes of the sector are numbered from 0 to 511 (0000 to 01FF in hexadecimal). The first line shows the first 16 bytes, 0 through 15. The next line shows the next 16 bytes, 16 through 31, etc. The displacement number in the left column indicates how many bytes into the sector each line is (0000, 0016, 0032, etc). The numbers in parentheses are the same offset numbered in hexadecimal.

The middle column displays 16 bytes of the sector in each line. Each byte is displayed as two-digit hexadecimal numbers. The same 16 bytes are displayed in ASCII values in the right column. Some or all of the ASCII values may appear unreadable. This is because those bytes may be program or data values and were never intended to be displayed as text.

3. Select any of the following commands from the bottom line to edit the disk:

Home: moves to the first sector of the disk.
End: moves to the last sector of the disk.
PgUp: moves the display to the previous half-sector.
PgDn: moves the display to the next half-sector.

Edit: enables you to make changes to a sector (described in the next section, "To Edit a Sector on a Disk").
Name: displays the file name to which the sector belongs.
Esc: cancels any editing changes and returns to the PC Shell main screen.
Change Sector: displays a dialog box with six "move to" selections:

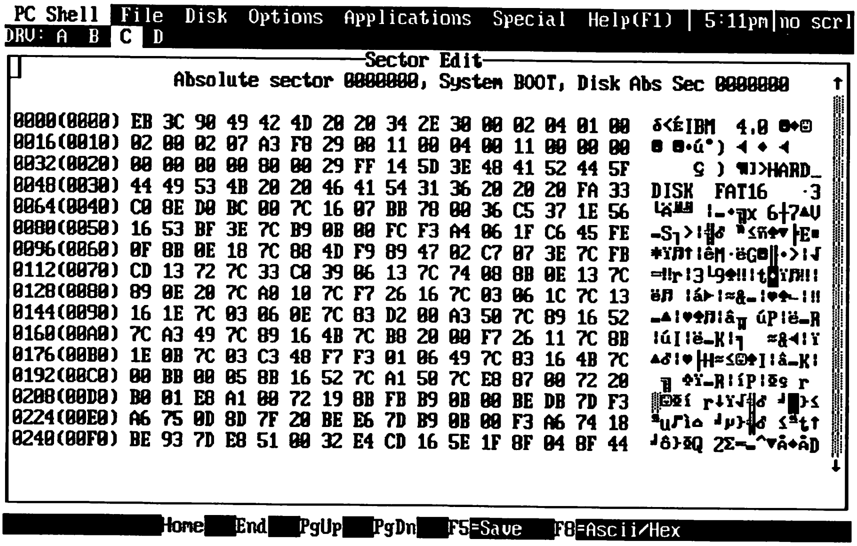


Change Sector to:
(•) Boot sector
( ) First FAT sector
( ) First ROOT DIR sector
( ) First DATA sector
( ) Change Cluster # (2-03647)
( ) Change Sector #

- **Boot sector:** moves to the first byte of the disk Boot Record.
- **First FAT sector:** moves to the first byte of the File Allocation Table.
- **First Root DIR sector:** moves to the first byte of the Root Directory.
- **First Data sector:** moves to the first byte of first Data Sector.
- **Change Cluster #:** allows you to enter the cluster number to move to the cluster.
- **Change Sector #:** allows you to enter the sector number to move to the sector.

To Edit a Sector on a Disk:

1. Select **Edit** from the Disk View/Edit dialog box.


PC Shell File Disk Options Applications Special Help(F1) | 5:11pm | no scrl
DRV: A B C D
Sector Edit
Home End PgUp PgDn F5=Save F8=Ascii/Hex

```
Absolute sector 0000000, System BOOT, Disk Abs Sec 0000000

0000(0000) EB 3C 90 49 42 4D 20 20 34 2E 30 00 02 04 01 00
0016(0010) 02 00 02 07 A3 F8 29 00 11 00 04 00 11 00 00 00
0032(0020) 00 00 00 00 80 00 29 FF 14 5D 3E 48 41 52 44 5F
0048(0030) 44 49 53 4B 20 20 46 41 54 31 36 20 20 20 FA 33
0064(0040) C0 8E D0 BC 00 7C 16 07 BB 78 00 36 C5 37 1E 56
0080(0050) 16 53 BF 3E 7C B9 0B 00 FC F3 A4 06 1F C6 45 FE
0096(0060) 0F 8B 0E 18 7C 88 4D F9 89 47 02 C7 07 3E 7C FB
0112(0070) CD 13 72 7C 33 C0 39 06 13 7C 74 08 8B 0E 13 7C
0128(0080) 89 0E 20 7C A0 10 7C F7 26 16 7C 03 06 1C 7C 13
0144(0090) 16 1E 7C 03 06 0E 7C 83 D2 00 A3 50 7C 89 16 52
0160(00A0) 7C A3 49 7C 89 16 4B 7C B8 20 00 F7 26 11 7C 8B
0176(00B0) 1E 0B 7C 03 C3 48 F7 F3 01 06 49 7C 83 16 4B 7C
0192(00C0) 00 BB 00 05 8B 16 52 7C A1 50 7C E8 87 00 72 20
0208(00D0) B0 01 E8 A1 00 72 19 8B FB B9 0B 00 BE DB 7D F3
0224(00E0) A6 75 0D 8D 7F 20 BE E6 7D B9 0B 00 F3 A6 74 18
0240(00F0) BE 93 7D E8 51 00 32 E4 CD 16 5E 1F 8F 04 8F 44
```

2. Use the Up, Down, Left or Right arrow keys to move the cursor from byte to byte. Position the cursor over the first byte you want to change.

3. Type in the new hexadecimal values. They replace the original bytes at the cursor position. The new values will appear in color or in a highlighted display. The corresponding ASCII characters will automatically change in the ASCII column.

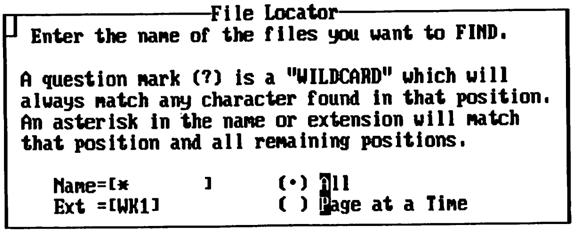
   Note: If you prefer, you may make changes to the ASCII column instead of the HEX column by selecting the F8 key. The corresponding values on the HEX column will also change.

4. Select **Save** (or F5) to write your changes to the disk. To disregard the changes, press Esc, F3, or click on the close box and you will return to the Disk View window.

Locate File

The Locate File command allows you to find specific files in subdirectories on your disk. Suppose you want to find a specific file and you know the name but you can't remember which subdirectory it is in. Use Locate to search all subdirectories on the disk and find the file.

1. Choose **Locate File** from the Disk pull-down menu, or press L, or click on "Locate" on the Command Bar. The File Locater dialog box appears.



```
File Locator
Enter the name of the files you want to FIND.

A question mark (?) is a "WILDCARD" which will
always match any character found in that position.
An asterisk in the name or extension will match
that position and all remaining positions.

   Name=[*        ]     (•) All
   Ext =[WK1]           ( ) Page at a Time
```

2. Enter the file name, or press Enter to accept the default of * .
3. Enter the extension, or press Enter to accept the default of .*

Note: To look for several files with similar names, use the "wildcard" characters "*" and "?". Wildcard characters help to search for multiple files that have some part of their name in common. Use the "*" as a place holder for an entire name or extension. Use the "?" as a place holder for a specific letter.

For example, if you searched for *.txt , Locate displays all files on the drive with the extension TXT. Likewise, if you searched for TE?T, Locate displays files with these common characters such as Text and Test.

Pressing Enter will start the search. If you want to change the Locate option, do the following:

4. Press the Tab key to move to the option buttons, and press the Up and Down arrow keys, and Enter to select the option, or press the highlighted letter of the option you want. You can also click on one of the options with the mouse:

All: locates all requested files at once and displays them in the Locate window.

Page at a Time: once as many files as will fit in the dialog box have been located, the locate process pauses and the message on the bottom line displays the following options, which you may select by pressing the highlighted letter or clicking on the function with the mouse:

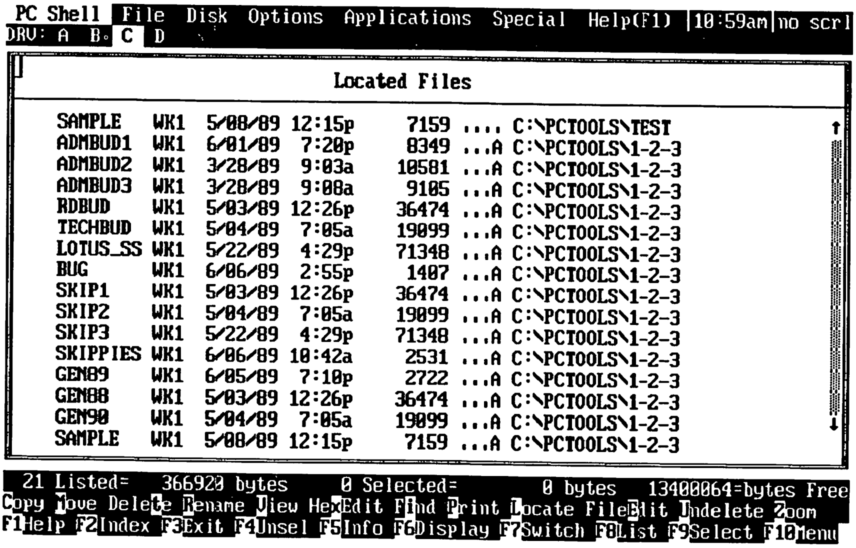
- **Locate all files:** continues the locate process until all files are located, without pausing.

- **Perform functions on the files:** enables you to perform operations (such as Copy, Move, etc.) on files located so far.

Selecting this option makes the located files available for manipulation. (See the following illustration.) They may be copied, compared, deleted, etc., with the commands available on the bottom line or from the pull-down menus. Using Locate in this manner is a convenient way to perform file commands on files that span multiple directories.

- **Next Page:** locates another dialog box full of files.

5. Press Enter twice to start Locate.


PC Shell
File
Disk
Options
Applications
Special
Help(F1)
10:59am
no scrl
DRV: A B C D
Copy Move Delete Rename View HexEdit Find Print Locate File Edit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
                              Located Files

SAMPLE    WK1  5/08/89 12:15p    7159 .... C:\PCTOOLS\TEST
ADMBUD1   WK1  6/01/89  7:20p    8349 ...A C:\PCTOOLS\1-2-3
ADMBUD2   WK1  3/28/89  9:03a   10581 ...A C:\PCTOOLS\1-2-3
ADMBUD3   WK1  3/28/89  9:08a    9105 ...A C:\PCTOOLS\1-2-3
RDBUD     WK1  5/03/89 12:26p   36474 ...A C:\PCTOOLS\1-2-3
TECHBUD   WK1  5/04/89  7:05a   19099 ...A C:\PCTOOLS\1-2-3
LOTUS_SS  WK1  5/22/89  4:29p   71348 ...A C:\PCTOOLS\1-2-3
BUG       WK1  6/06/89  2:55p    1407 ...A C:\PCTOOLS\1-2-3
SKIP1     WK1  5/03/89 12:26p   36474 ...A C:\PCTOOLS\1-2-3
SKIP2     WK1  5/04/89  7:05a   19099 ...A C:\PCTOOLS\1-2-3
SKIP3     WK1  5/22/89  4:29p   71348 ...A C:\PCTOOLS\1-2-3
SKIPPIES  WK1  6/06/89 10:42a    2531 ...A C:\PCTOOLS\1-2-3
GEN89     WK1  6/05/89  7:10p    2722 ...A C:\PCTOOLS\1-2-3
GEN88     WK1  5/03/89 12:26p   36474 ...A C:\PCTOOLS\1-2-3
GEN90     WK1  5/04/89  7:05a   19099 ...A C:\PCTOOLS\1-2-3
SAMPLE    WK1  5/08/89 12:15p    7159 ...A C:\PCTOOLS\1-2-3

 21 Listed=   366920 bytes     0 Selected=          0 bytes   13400064=bytes Free
```

Once the located files are displayed in the locate window you can hotkey in and out of PC Shell and the listed files will remain. If any files were selected, they will remain selected through the hotkey process.

You can also launch a program from the locate window the same way you can from a file list window. For example, if you have located all of your Microsoft Word files (*.DOC) and Microsoft Word is installed on your application list to run with associated files with the *.DOC extension, Ctrl-Enter will launch Word and load the selected, or highlighted, file in the Locate window.

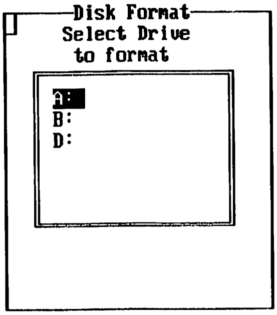
Format Data Disk

The Format Data Disk command allows you to format a new data diskette. Format Data Disk is convenient when PC Shell is running resident. You can call PC Shell from within another program to format a data disk, then return to your program and save data to the new disk.

Note: Formatting initializes each track of the disk so that your computer can recognize it as a DOS disk. Formatting is also used to erase anything currently on a disk. New disks must be formatted before they can be used to store data.

Format Data Disk is designed for formatting new data disks - not for making bootable disks. You can, however, use the Make System Disk command to create a bootable disk. For details on this procedure, see the Make System Disk command in this chapter.

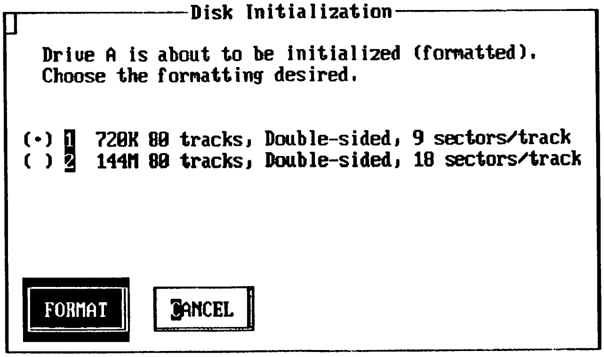
1. Insert the diskette to format in the appropriate drive.
2. Choose **Format Data Disk** from the Disk pull-down menu. The Disk Format dialog box appears asking you to select the drive containing the disk.



Select Drive
to format

A:
B:
D:

3. To proceed, select a drive by pressing a drive letter or clicking on a drive letter with the mouse, or press Esc to cancel.
4. The Disk Initialization dialog box appears, listing the appropriate formatting options.



Drive A is about to be initialized (formatted).
Choose the formatting desired.

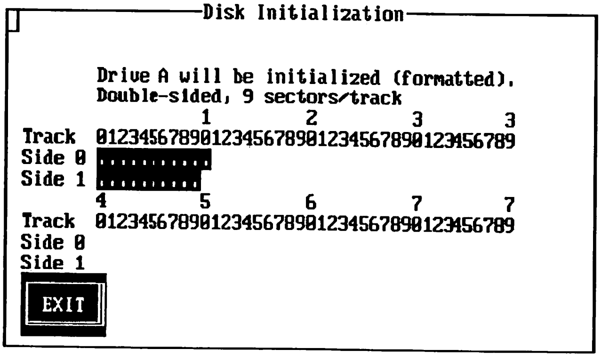
(•) 1 720K 80 tracks, Double-sided, 9 sectors/track
( ) 2 144M 80 tracks, Double-sided, 18 sectors/track

PC Shell displays all the format options that are supported by the selected drive. The possible options are the following:

160K single-sided; 8 sectors per track; 40 tracks
180K single-sided; 9 sectors per track; 40 tracks
320K double-sided; 8 sectors per track; 40 tracks
360K double-sided; 9 sectors per track; 40 tracks
1.2M high capacity; 80 tracks; double-sided; 15 sectors per track
720K 3 1/2 diskette; 80 tracks; double-sided; 9 sectors per track
1.44M high capacity; 80 tracks; double-sided; 18 sectors per track

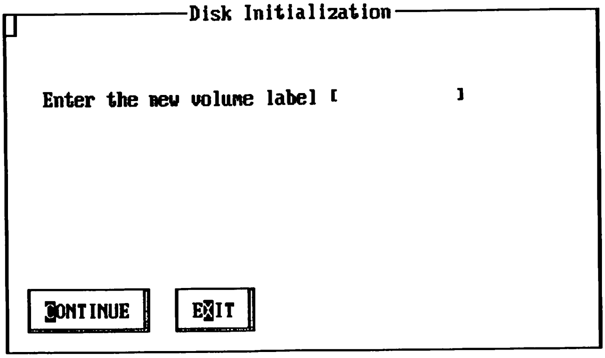
The 1.2M and 1.4M options are usually available only on machines with 80286 and 80386 processors. In addition, 1.44M options require PC DOS version 3.2 or higher, or MS-DOS version 3.3 or higher. DOS's DRIVER.SYS file may need to be installed in your CONFIG.SYS file before all formatting options are present. Please refer to your DOS manual for more information on the use and installation of this file.

5. Select the option you want to use to format the disk and then select **Continue** to proceed or **Exit** to cancel the format.
6. The Disk Initialization dialog box displays the status of the disk being formatted. To terminate the formatting process select **Exit**.



```
Disk Initialization

        Drive A will be initialized (formatted).
        Double-sided, 9 sectors/track
                  1         2         3        3
Track   0123456789012345678901234567890123456789
Side 0
Side 1
        4         5         6         7        7
Track   0123456789012345678901234567890123456789
Side 0
Side 1
```

7. When the format is complete, the Disk Initialization dialog box prompts you to enter the new volume label. Type in the name of the new disk and select **Continue** to proceed or select **Exit** for a blank volume name.

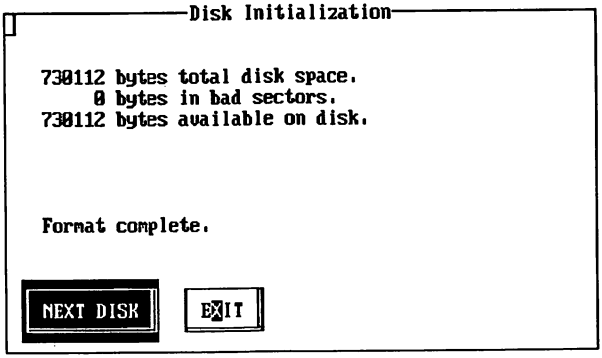


```
Enter the new volume label [          ]
```

8. The Disk Initialization dialog box asks you if you want the disk to be bootable; select **Bootable**. If not, you may select **Skip** to proceed to the Disk Initialization dialog box to format another disk or **Exit** to return to the main PC Shell screen.

   Note: Making a disk bootable takes disk space, so unless you plan to boot from the disk, we recommend not taking this option. If you do take this option, the disk will not be immediately bootable, but will have the boot record, and space will be reserved for the DOS files. For details on making a disk bootable, see the Make System Disk command.

9. If you select **Skip**, the Disk Initialization dialog box will display the following disk information:



```
730112 bytes total disk space.
     0 bytes in bad sectors.
730112 bytes available on disk.


Format complete.
```

Number of bytes of total disk space
Number of bytes in bad sectors
Number of bytes available on the disk

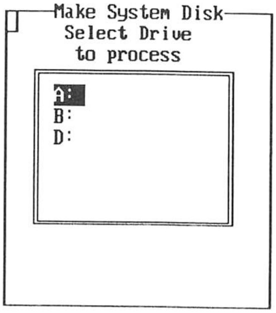
10. Select **Next Disk** to format another disk or **Exit** to return to the main PC Shell screen.

Make System Disk

The Make System Disk command allows you to transfer the system files to a formatted disk so it can be used to boot the system.

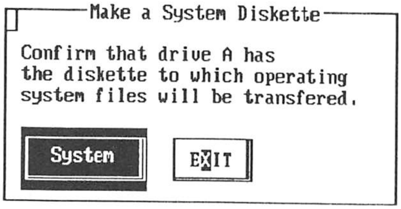
Note: The Make System Disk command will transfer the system files to a newly formatted disk. The disk must be blank, so that one of the system files may be placed in an exact location on the disk. If this location is not available, the transfer will fail.

1. Insert the diskette you want to make bootable in the appropriate drive.
2. Choose **Make System Disk** from the Disk pull-down menu. The Drive Select dialog box appears asking you to select the drive containing the disk.



Select Drive
to process

3. To proceed, select a drive by pressing a drive letter or clicking on a drive letter with the mouse, or press Esc to cancel.
   The Make System Disk dialog box will ask you to verify the process.



Confirm that drive A has
the diskette to which operating
system files will be transfered.

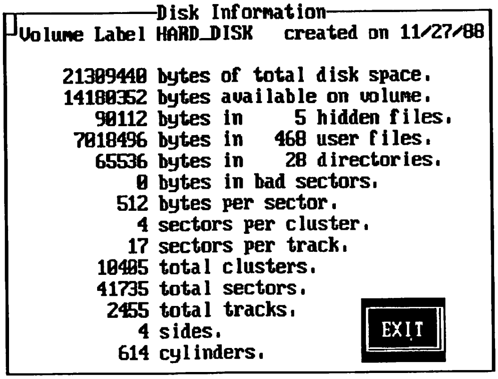
4. Select **System** to proceed or **Exit** to return to the main PC Shell screen.

Note: The Make System Disk function will report any errors in the process or successful completion.

Disk Info

The Disk Info command displays helpful information about a disk such as the available disk space, number of hidden and user files and the number of bytes in bad sectors.

1. Select the Drive from the drive command line.
2. Choose **Disk Info** from the Disk pull-down menu, or press F5, or click on "F5Info" on the Message Bar. PC Shell displays the information about the disk.



```
                    Disk Information
Volume Label HARD_DISK   created on 11/27/88

     21309440 bytes of total disk space.
     14180352 bytes available on volume.
        90112 bytes in     5 hidden files.
      7018496 bytes in   468 user files.
        65536 bytes in    28 directories.
            0 bytes in bad sectors.
          512 bytes per sector.
            4 sectors per cluster.
           17 sectors per track.
        10405 total clusters.
        41735 total sectors.
         2455 total tracks.
            4 sides.
          614 cylinders.
```

3. Select **Exit** to return to the main PC Shell screen.

Park Disk

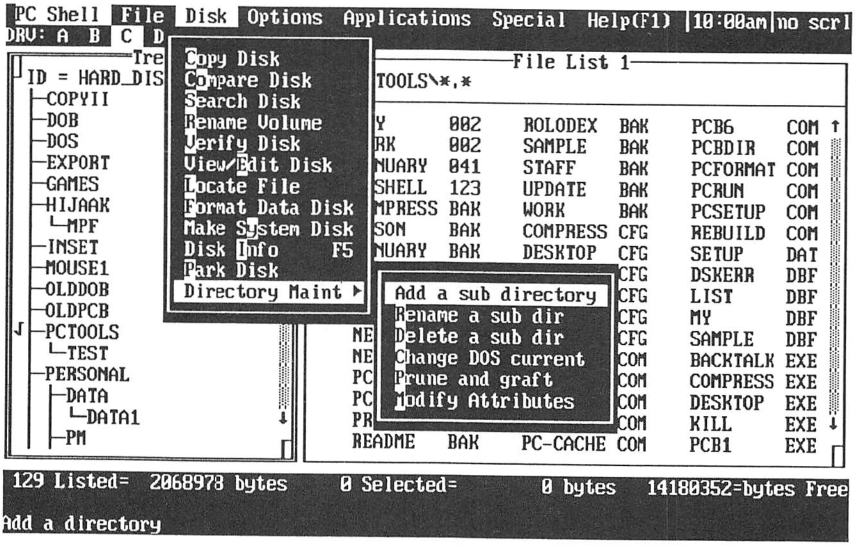
The Park Disk command parks the hard disk head. This is recommended if you are going to move your computer, as it will position the head over an unused portion of your hard disk. This prevents loss of data caused from the head "bouncing" on the disk surface.

1. Choose **Park Disk** from the Disk pull-down menu. The hard disk head is parked at the highest cylinder on the drive. On a partitioned hard disk, this is at the end of the last partition.
2. Select **Cancel** to continue working and return to the main PC Shell screen.

Directory Maint

The Directory Maint command allows you to perform the following:

Add a new subdirectory
Rename a subdirectory
Delete a subdirectory
Change to a current subdirectory
Prune and Graft subdirectories
Modify Attributes of a subdirectory

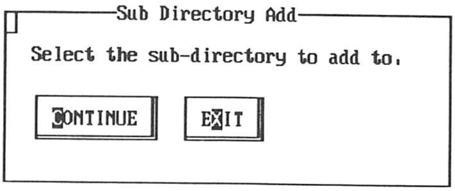


129 Listed= 2068978 bytes 0 Selected= 0 bytes 14180352=bytes Free
Add a directory

Warning: If PC Shell is memory resident, be sure that no files in the affected subdirectories are in use by another program. You may need to update the path statement in your AUTOEXEC.BAT file. Also, remember to update any batch files that may depend on the old path structure.

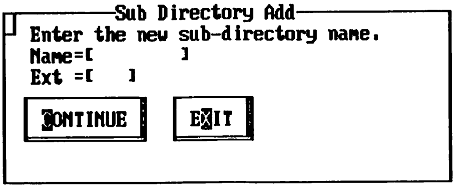
To Add a Subdirectory:

1. Choose **Directory Maint** from the Disk pull-down menu. PC Shell displays the Directory Maintenance sub-menu.
2. Choose **Add a subdirectory** from the Directory Maintenance sub-menu.
3. If the current drive contains subdirectories, the Subdirectory Add dialog box appears, prompting you to select a subdirectory in which you want to add the new subdirectory.



Select the sub-directory to add to.

4. Use the Tree List window to select where you want to add the new subdirectory or select **Continue** if the current highlighted subdirectory is the one you want to add a subdirectory to. Select **Exit** to return to the Directory Maintenance sub-menu.

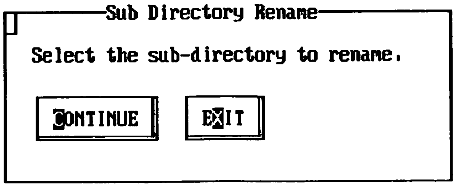


```
Sub Directory Add
Enter the new sub-directory name.
Name=[        ]
Ext =[   ]
```

5. Type in the name (and optionally the extension) of the new subdirectory and select **Continue** to add the subdirectory Select **Exit** to return to the Directory Maintenance sub-menu.

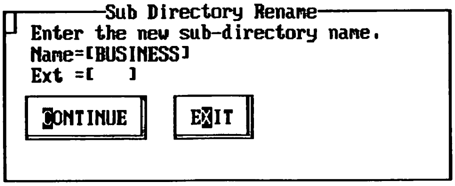
To Rename a Subdirectory:

1. Choose **Directory Maint** from the Disk pull-down menu. PC Shell displays the Directory Maintenance sub-menu.
2. Choose **Rename a subdirectory** from the Directory Maintenance sub-menu.
3. The Subdirectory Rename dialog box appears prompting you to select a subdirectory in which to rename.



```
Sub Directory Rename
Select the sub-directory to rename.
```

4. Use the Tree List window to select which subdirectory you want to rename or select **Continue** if the current highlighted subdirectory is the one you want to rename. Select **Exit** to return to the Directory Maintenance sub-menu.



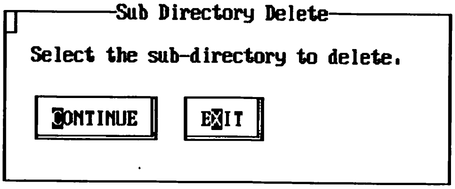
```
Sub Directory Rename
Enter the new sub-directory name.
Name=[BUSINESS]
Ext =[   ]
```

5. Type in the new name (and optionally the extension) of the subdirectory and select **Continue** to rename the subdirectory. If the new name is in use, you will be sent back to the Subdirectory Rename dialog box to try another name. Select **Exit** to return to the Directory Maintenance sub-menu.

Note: The Root directory cannot be renamed.

To Delete a Subdirectory:

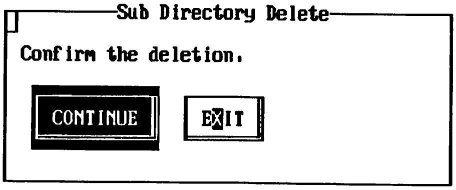
1. Choose **Directory Maint** from the Disk pull-down menu. PC Shell displays the Directory Maintenance sub-menu.
2. Choose **Delete a subdirectory** from the Directory Maintenance sub-menu.
3. The Subdirectory Delete dialog box will appear prompting you to select a subdirectory to delete.


Sub Directory Delete

Select the sub-directory to delete.

4. Use the Tree window to select which subdirectory you want to delete or select **Continue** if the current highlighted subdirectory is the one you want to delete. Select **Exit** to return to the Directory Maintenance sub-menu.

   Note: The Root directory cannot be deleted.


Sub Directory Delete

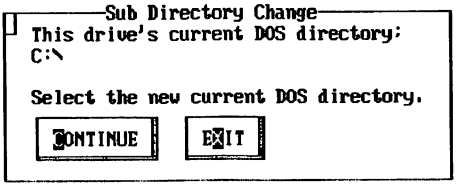
Confirm the deletion.

5. Select **Continue** to confirm the deletion or select **Exit** to terminate the process and return to the Directory Maintenance sub-menu.

Note: Delete a subdirectory can only delete subdirectories that contain no files. If the subdirectory contains files, refer to the Delete File section for information on deleting them.

To Change the DOS Current Subdirectory:

1. Choose **Directory Maint** from the Disk pull-down menu. PC Shell displays the Directory Maintenance sub-menu.
2. Choose **Change DOS current** from the Directory Maintenance sub-menu.
3. The Subdirectory Change dialog box will appear, prompting you to select the subdirectory to make current. (The current DOS directory is also displayed.)



Sub Directory Change

This drive's current DOS directory:
C:\

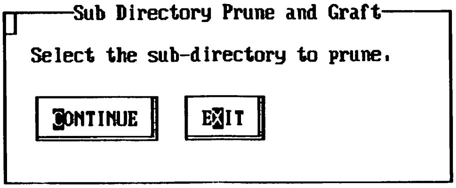
Select the new current DOS directory.

4. Use the Tree List window to select which subdirectory you want to make current or select **Continue** if the current highlighted subdirectory is the one you want to make current. Select **Exit** to return to the Directory Maintenance sub-menu.

To Prune and Graft a Subdirectory:

Prune and Graft allows you to move an entire subdirectory, along with all of its files and subdirectories, to a new area.

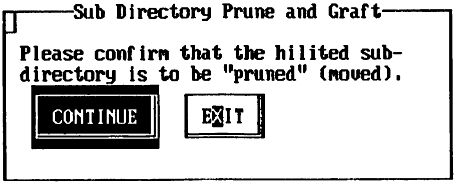
1. Choose **Directory Maint** from the Disk pull-down menu. PC Shell displays the Directory Maintenance sub-menu.
2. Choose **Prune and Graft** from the Directory Maintenance sub-menu.
3. The Subdirectory Prune and Graft dialog box will appear prompting you to select a subdirectory to prune.



Sub Directory Prune and Graft

Select the sub-directory to prune.

4. Use the Tree window to select which subdirectory you want to prune or select **Continue** if the current highlighted subdirectory is the one you want to prune. Select **Exit** to return to the Directory Maintenance sub-menu.

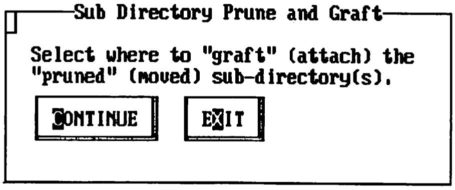


Sub Directory Prune and Graft

Please confirm that the hilited sub-
directory is to be "pruned" (moved).

Note: The subdirectory that is being pruned is marked with a (>) symbol.

5. The Subdirectory Prune and Graft dialog box appears prompting you to select a subdirectory to graft the pruned subdirectory to.



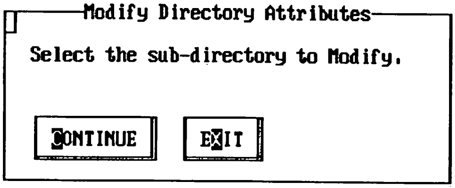
Select where to "graft" (attach) the "pruned" (moved) sub-directory(s).

6. Use the Tree window to select which subdirectory you want to graft to or select **Continue** if the current highlighted subdirectory is the one you want to graft to. Select **Exit** to return to the Directory Maintenance sub-menu.
7. Select **Continue** to confirm that the marked (>) subdirectory is to be grafted to the highlighted subdirectory. Select **Exit** to terminate the process and return to the Directory Maintenance sub-menu.

To Modify Subdirectory Attributes:

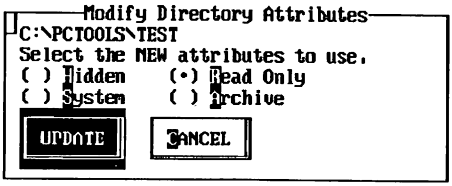
Modify Attributes allows you to specify a subdirectory as hidden, system, read-only, or archive.

1. Choose **Directory Maint** from the Disk pull-down menu. PC Shell displays the Directory Maintenance sub-menu.
2. Choose **Modify Attributes** from the Directory Maintenance sub-menu.
3. The Modify Directory Attributes dialog box appears prompting you to select a subdirectory to modify.



Select the sub-directory to Modify.

4. Use the Tree window to select which subdirectory you want to modify or select **Continue** if the current highlighted subdirectory is the one you want to modify. Select **Exit** to return to the Directory Maintenance sub-menu.
5. The Modify Directory Attributes dialog box appears for you to select any of the following attributes:



C:\PCTOOLS\TEST
Select the NEW attributes to use.
○ Hidden ● Read Only
○ System ○ Archive

Read Only (R) normally this option is not used; however, it may be used for some copy-protection schemes.

Hidden (H) makes the subdirectory "invisible" so that it is not listed when you use the DOS directory command. PC Shell, however, will display hidden directories.

System (S) makes the system subdirectory "invisible" so that it is not listed when you use the DOS directory command.

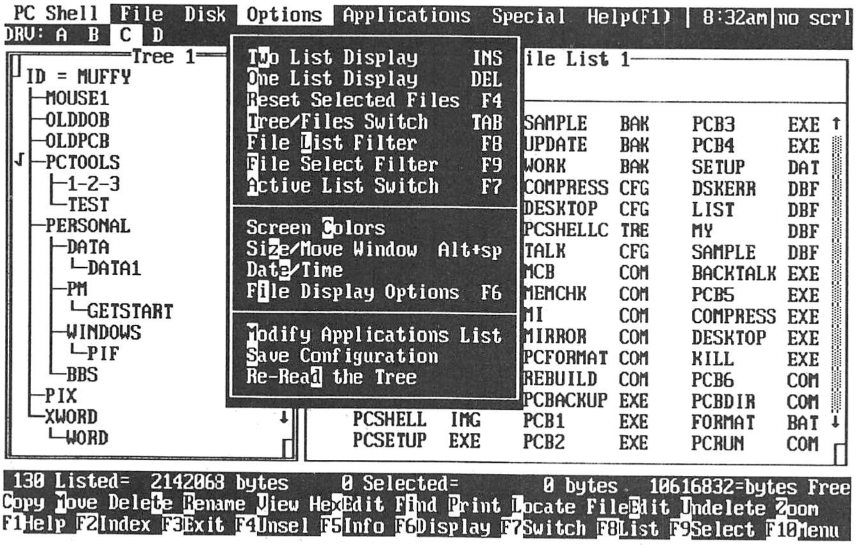
Archive (A) normally this option is not used; however, it may be used for some copy-protection schemes.

Warning: You should not change the attributes of copy-protected subdirectories or system subdirectories. Changing these attributes can result in programs not running or your hard disk not booting.

6. Select **Update** to confirm the selected attributes. Select **Cancel** to terminate the process and return to the PC Shell main screen.

The Options Menu

Choosing **Options** from the horizontal menu bar displays the Options pull-down menu.



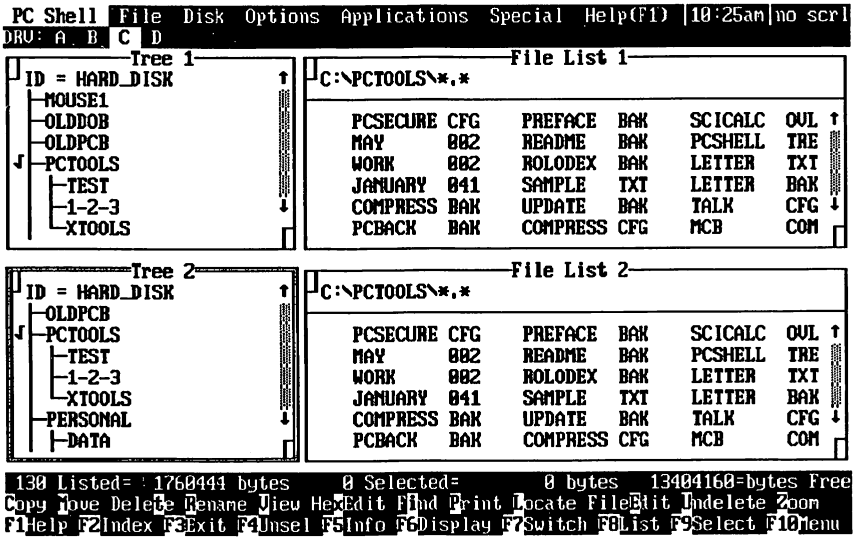
```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) | 8:32am|no scrl
DRV: A  B  C  D
         Tree 1    Two List Display      INS  ile List 1
 ID = MUFFY        One List Display      DEL
  ├MOUSE1          Reset Selected Files   F4
  ├OLDDOB          Tree/Files Switch     TAB  SAMPLE   BAK   PCB3     EXE
  ├OLDPCB          File List Filter       F8  UPDATE   BAK   PCB4     EXE
√ ├PCTOOLS         File Select Filter     F9  WORK     BAK   SETUP    DAT
  │ ├1-2-3         Active List Switch     F7  COMPRESS CFG   DSKERR   DBF
  │ └TEST                                     DESKTOP  CFG   LIST     DBF
  ├PERSONAL        Screen Colors              PCSHELLC TRE   MY       DBF
  │ ├DATA          Size/Move Window  Alt+sp   TALK     CFG   SAMPLE   DBF
  │ │ └DATA1       Date/Time                  MCB      COM   BACKTALK EXE
  │ ├PM            File Display Options   F6  MEMCHK   COM   PCB5     EXE
  │ │ └GETSTART                               MI       COM   COMPRESS EXE
  │ ├WINDOWS       Modify Applications List   MIRROR   COM   DESKTOP  EXE
  │ │ └PIF         Save Configuration         PCFORMAT COM   KILL     EXE
  │ └BBS           Re-Read the Tree           REBUILD  COM   PCB6     COM
  ├PIX                                        PCBACKUP EXE   PCBDIR   COM
  └XWORD                   PCSHELL  IMG       PCB1     EXE   FORMAT   BAT
    └WORD                  PCSETUP  EXE       PCB2     EXE   PCRUN    COM
 130 Listed=  2142068 bytes     0 Selected=       0 bytes  10616832=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

Two List Display

The Two List Display command opens a second set of Tree and File List windows for another drive or subdirectory. This is helpful when copying, moving or comparing files from one drive or subdirectory to another. (See the File Copy command section of this manual for a detailed procedure on "dragging" files from one directory to another using the Two List Display.)

1. Choose either the **Two List Display** from the Options pull-down Menu or press the INS key. PC Shell opens a second set of display windows.

Short Cut: To quickly open a second set of windows and read another drive, press Ctrl-Alt-Drive letter (where the letter is the other drive you want to read.)



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |10:25am|no scrl
DRV: A  B  C  D
            Tree 1                                 File List 1
ID = HARD_DISK            ↑   C:\PCTOOLS\*.*
 ├MOUSE1
 ├OLDDOB                        PCSECURE CFG   PREFACE  BAK   SCICALC  OVL ↑
 ├OLDPCB                        MAY      002   README   BAK   PCSHELL  TRE
 ├PCTOOLS                       WORK     002   ROLODEX  BAK   LETTER   TXT
 │ ├TEST                        JANUARY  041   SAMPLE   TXT   LETTER   BAK
 │ ├1-2-3                 ↓     COMPRESS BAK   UPDATE   BAK   TALK     CFG ↓
 │ └XTOOLS                      PCBACK   BAK   COMPRESS CFG   MCB      COM

            Tree 2                                 File List 2
ID = HARD_DISK            ↑   C:\PCTOOLS\*.*
 ├OLDPCB
 ├PCTOOLS                       PCSECURE CFG   PREFACE  BAK   SCICALC  OVL ↑
 │ ├TEST                        MAY      002   README   BAK   PCSHELL  TRE
 │ ├1-2-3                       WORK     002   ROLODEX  BAK   LETTER   TXT
 │ └XTOOLS                      JANUARY  041   SAMPLE   TXT   LETTER   BAK
 ├PERSONAL                ↓     COMPRESS BAK   UPDATE   BAK   TALK     CFG ↓
 │ ├DATA                        PCBACK   BAK   COMPRESS CFG   MCB      COM
 130 Listed= 1760444 bytes     0 Selected=        0 bytes   13404160=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

2. From either of the Tree List windows, select the second subdirectory that you want to display, or from the Drive Command Line, select a new drive letter. PC Shell displays Tree and File List windows for the new drive.

   Note: To save the Two List Display settings for subsequent PC Shell sessions, use the **Save Configuration** command in the Options pull-down Menu.

One List Display

The One List Display command closes the second set of Tree and File List windows (the inactive ones) and returns you to the single list window display.

- Choose either the **One List Display** from the Options menu or press the DEL key. The second set of windows will disappear.

  Note: To save the One List Display for subsequent PC Shell sessions, use the **Save Configuration** command in the Options pull-down Menu.

Reset Selected Files

The **Reset Selected Files** command will unselect all selected files in the active File List window.

- Choose **Reset Selected Files** from the Options menu, or press the F4 key, or click on "F4Unsel" on the Message Bar. All previously selected files are now unselected.

Tree/Files Switch

The Tree/File Switch command allows you to switch the active window between the Tree window and the File List window.

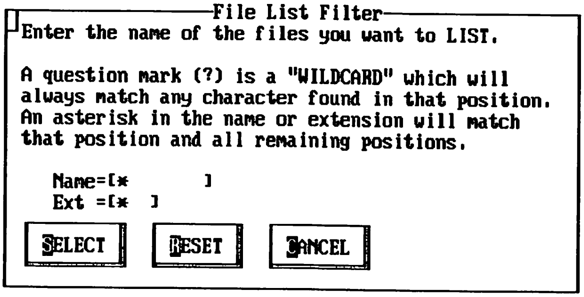
To Make either the File List Window or the Tree Window Active:

- Choose **Tree/Files Switch** from the Options menu, press the Tab key, or click in the other window with the mouse. PC Shell switches between the Tree or File List window, making it active. The active window is indicated by a highlighted, double-lined border.

File List Filter

The File List Filter command allows you to limit the files listed in the File List window. You can use wildcard characters such as "*" and "?" to list files with common file names, extension or characters.

1. Choose the **File List Filter** command from the Options menu, or press the F8 key, or click on "F8List" on the Message Bar. The File List Filter dialog box is displayed.



```
File List Filter
Enter the name of the files you want to LIST.

A question mark (?) is a "WILDCARD" which will
always match any character found in that position.
An asterisk in the name or extension will match
that position and all remaining positions.

   Name=[*       ]
   Ext =[*  ]
```

2. Enter the file name and/or extension you want listed.

   Note: For example, *.* will match all files and show the entire directory. *.COM will match and list only the files with an extension of COM.

3. Choose **Select** to proceed. PC Shell returns to the main PC Shell screen with the files you selected listed.

Note: Once the File List Filter is used, you must use it to again to show all files.

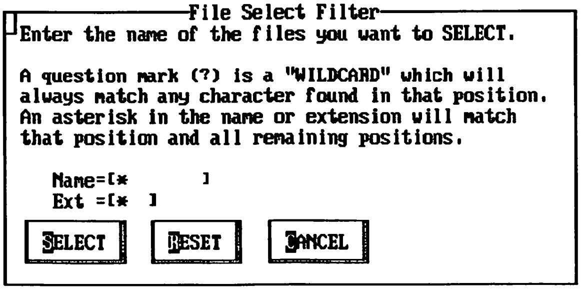
- Select **Reset** to reset the file name and extension to *.*.

- Select **Cancel** to end the procedure.

File Select Filter

The File Select Filter command allows you to select a group of files that have common file names, extensions or characters. You can use wildcard characters such as "*" and "?" to select a specific group of files.

1. Choose the **File Select Filter** from the Options menu, or press the F9 key, or click on "F9Select" on the Message Bar. The File Select Argument dialog box is displayed.



```
                File Select Filter
Enter the name of the files you want to SELECT.

A question mark (?) is a "WILDCARD" which will
always match any character found in that position.
An asterisk in the name or extension will match
that position and all remaining positions.

   Name=[*        ]
   Ext =[*  ]
```

2. Enter the file name or extension you want selected.

   Note: For example, *.* will match all files and select the entire directory. *.COM will match and select only the files with an extension of COM.

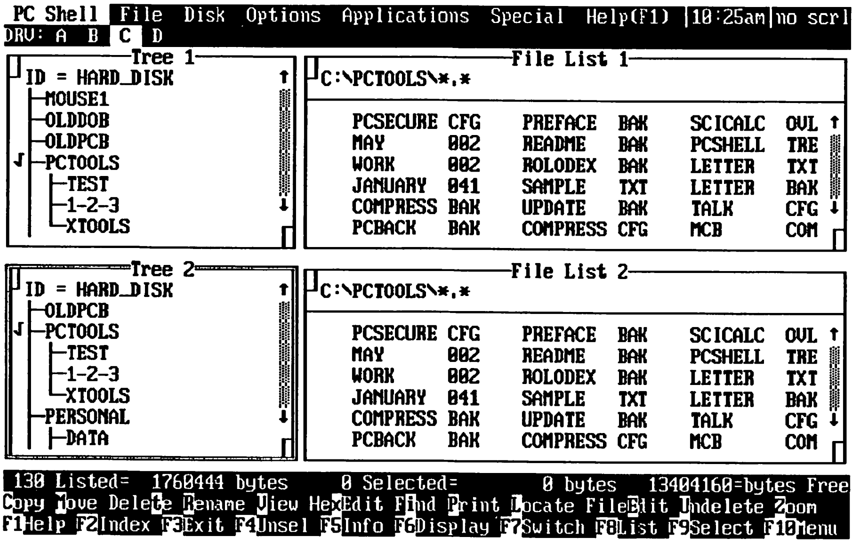
3. Choose **Select** to proceed. PC Shell returns to the main PC Shell screen with the files selected by argument.

   - Select **Reset** to reset the file name and extension to *.*.

   - Select **Cancel** to end the procedure.

Active List Switch

You can have more than one window open at once, but you can work in only one window at a time, the active window. The active window is indicated by a highlighted, double-lined border; all other windows have a single-lined border. The Active List Switch command allows you to switch between window set 1 and window set 2 on a Two List Display.


PC Shell File Disk Options Applications Special Help(F1) |10:25am|no scrl
DRV: A B C D
Tree 1
File List 1
Tree 2
File List 2
Copy Move Delete Rename View HexEdit Find Print Locate File Edit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
ID = HARD_DISK                C:\PCTOOLS\*.*
 ├MOUSE1
 ├OLDDOB                          PCSECURE CFG   PREFACE  BAK   SCICALC  OVL
 ├OLDPCB                          MAY      002   README   BAK   PCSHELL  TRE
√├PCTOOLS                         WORK     002   ROLODEX  BAK   LETTER   TXT
 │ ├TEST                          JANUARY  041   SAMPLE   TXT   LETTER   BAK
 │ ├1-2-3                         COMPRESS BAK   UPDATE   BAK   TALK     CFG
 │ └XTOOLS                        PCBACK   BAK   COMPRESS CFG   MCB      COM

ID = HARD_DISK                C:\PCTOOLS\*.*
 ├OLDPCB
√├PCTOOLS                         PCSECURE CFG   PREFACE  BAK   SCICALC  OVL
 │ ├TEST                          MAY      002   README   BAK   PCSHELL  TRE
 │ ├1-2-3                         WORK     002   ROLODEX  BAK   LETTER   TXT
 │ └XTOOLS                        JANUARY  041   SAMPLE   TXT   LETTER   BAK
 ├PERSONAL                        COMPRESS BAK   UPDATE   BAK   TALK     CFG
 │ ├DATA                          PCBACK   BAK   COMPRESS CFG   MCB      COM

 130 Listed=  1760444 bytes     0 Selected=          0 bytes   13404160=bytes Free
```

To select which window is active, perform the following:

Keyboard

- Choose **Active List Switch** from the Options menu or press the F7 key. PC Shell switches between window set 1 and window set 2.

  Note: You can switch between the Tree list and the File list by pressing the Tab key.

Mouse

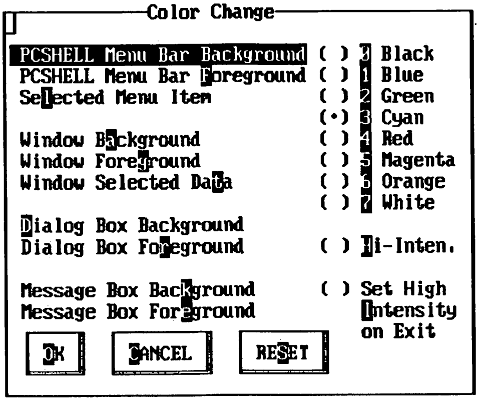
- Click in the window you want as the active window, or click on "F7Switch" on the Message Bar.
  The selected window is "activated," and if stacked, the selected window is placed on top.

Screen Colors

The Screen Colors command allows you to change the screen colors to customize your display. You can change the colors of various screen areas, such as the background, foreground, menu text, and dialog box text.

1. Choose the **Screen Colors** command from the Options menu.
   The Color Change dialog box appears.

   Note: If you have a monochrome display or have set the /bw parameter this function is not available.



2. Select any of the following screen areas you want to change by pressing the highlighted letter in each selection or by clicking on the appropriate area with a mouse.

   PC Shell Menu Bar Background: background color of the PC Shell menu bar.

   PC Shell Menu Bar Foreground: color of text in the PC Shell menu bar.

   Selected Menu Item: color of the highlighted letter in PC Shell's menu bar.

   Window Background: background color of the Tree and File List windows.

   Window Foreground: color of text in the Tree and File List windows.

Window Selected Data: color of the selected files(s) in the File List window or data in the database viewer.

Dialog Box Background: background color of the dialog boxes.

Dialog Box Foreground: color of text in the dialog boxes.

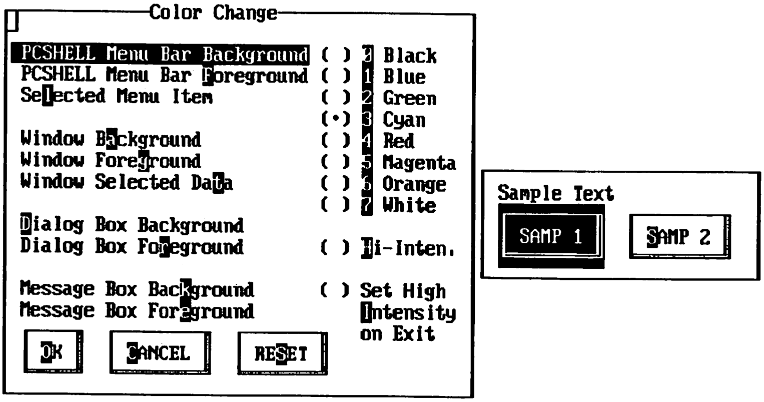
Message Box Background: background color of message boxes.

Message Box Foreground: color of text in messages boxes.

Set high Intensity on exit: turns the high intensity background controller on when when hotkeying out of Shell on CGA and EGA monitors.

On color monitors which provide high intensity colors, you can have either high intensity background colors or blinking characters. PC Shell uses high intensity background and sets blinking on exit. If you hotkey into PC Shell on a CGA or EGA monitor from a program with high intensity background selected, you will have characters blinking on exit from Shell. To correct this, select the Set high intensity on exit option. This option does not affect the colors in PC Shell.

Note: If you select dialog or message box backgrounds or foregrounds the following sample dialog box appears showing the selected colors for you to preview.



3. Select the desired colors from the Color Change dialog box by pressing the highlighted number or H for high intensity, or clicking on the appropriate color with a mouse.

   The available colors to choose are the following:

   - **Black**
   - **Blue**
   - **Green**
   - **Cyan**
   - **Red**
   - **Magenta**
   - **Orange**
   - **White**
   - **Hi-Inten:** high intensity video display.

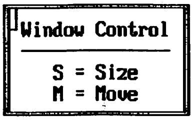
4. Select **OK** to change the selected colors or **Cancel** to disregard the changes and return to the main PC Shell screen. Selecting **Reset** sets the default colors.

Note: To save the new colors for subsequent PC Shell sessions, use the Save Configuration command in the Options pull-down Menu.

Size/Move Window

The Size/Move Window command allows you to resize or move the active Tree or File List window with the arrow keys on the keyboard. These windows may also be changed with a mouse.

1. Make the window active that you want to change.
2. Select the **Size/Move Window** command from the Options menu or press the Alt - Spacebar keys.
   The Window Control dialog box appears with two selections, **Size** or **Move.**



Window Control

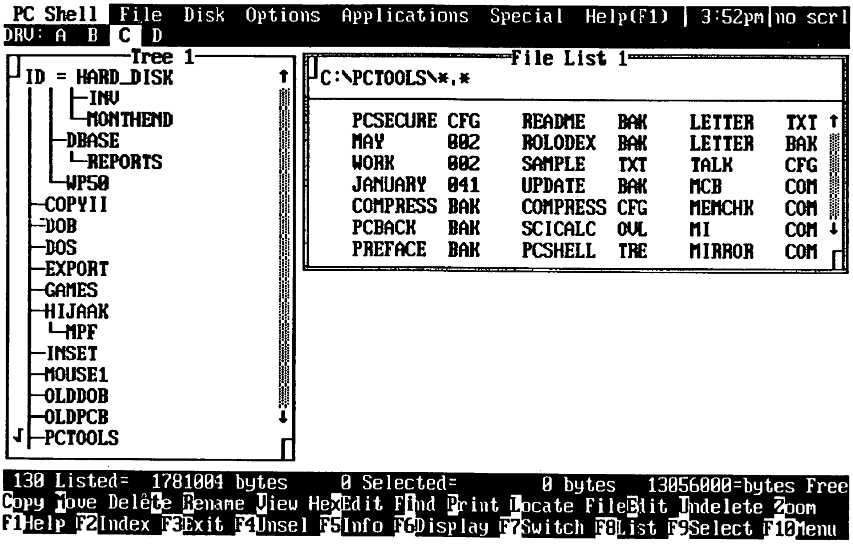
S = Size
M = Move

3. Use the Up and Down arrow keys and press Enter to select the command you want or just press the first letter of the command.

To Resize a Window:

Keyboard

1. Use the Up, Down, Left or Right arrow keys to resize the window. The upper-left corner remains in the same place while the lower-right corner moves.


PC Shell
File
Disk
Options
Applications
Special
Help(F1)
3:52pm
no scrl
DRV: A B C D
Tree 1
File List 1
Copy Move Delete Rename View HexEdit Find Print Locate File Edit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
ID = HARD_DISK
  INV
  MONTHEND
  DBASE
  REPORTS
  WP50
 COPYII
 DOB
 DOS
 EXPORT
 GAMES
 HIJAAK
  MPF
 INSET
 MOUSE1
 OLDDOB
 OLDPCB
 PCTOOLS
```

```
C:\PCTOOLS\*.*

PCSECURE CFG   README   BAK   LETTER   TXT
MAY      002   ROLODEX  BAK   LETTER   BAK
WORK     002   SAMPLE   TXT   TALK     CFG
JANUARY  041   UPDATE   BAK   MCB      COM
COMPRESS BAK   COMPRESS CFG   MEMCHK   COM
PCBACK   BAK   SCICALC  OVL   MI       COM
PREFACE  BAK   PCSHELL  TRE   MIRROR   COM
```

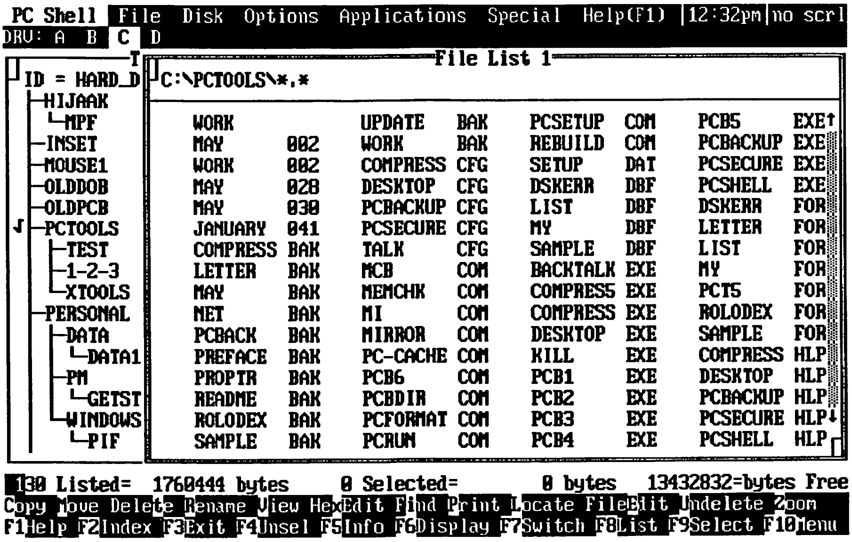
```
 130 Listed=  1781004 bytes     0 Selected=         0 bytes   13056000=bytes Free
```

2. Press Enter when the window is the size you want. Press Esc to exit.

Mouse

1. Position the mouse pointer on the size box in the lower-right corner. If there is no size box, the window cannot be resized.
2. Click and then drag the size box to resize the window. The upper-left corner remains in the same place while the lower-right corner moves.
3. Release the mouse button.

Both the Tree List and File List Windows may be resized or moved. The following screen shows the File List window resized to display all the files in a directory.



```
PC Shell File  Disk  Options  Applications  Special  Help(F1) |12:32pm|no scrl
DRV: A  B  C  D
            File List 1
 ID = HARD_D  C:\PCTOOLS\*.*
 ├HIJAAK
 │ └MPF       WORK              UPDATE   BAK   PCSETUP  COM   PCB5     EXE
 ├INSET       MAY      002      WORK     BAK   REBUILD  COM   PCBACKUP EXE
 ├MOUSE1      WORK     002      COMPRESS CFG   SETUP    DAT   PCSECURE EXE
 ├OLDDOB      MAY      028      DESKTOP  CFG   DSKERR   DBF   PCSHELL  EXE
 ├OLDPCB      MAY      030      PCBACKUP CFG   LIST     DBF   DSKERR   FOR
√├PCTOOLS     JANUARY  041      PCSECURE CFG   MY       DBF   LETTER   FOR
 │├TEST       COMPRESS BAK      TALK     CFG   SAMPLE   DBF   LIST     FOR
 │├1-2-3      LETTER   BAK      MCB      COM   BACKTALK EXE   MY       FOR
 │└XTOOLS     MAY      BAK      MEMCHK   COM   COMPRESS EXE   PCT5     FOR
 ├PERSONAL    NET      BAK      MI       COM   COMPRESS EXE   ROLODEX  FOR
 │├DATA       PCBACK   BAK      MIRROR   COM   DESKTOP  EXE   SAMPLE   FOR
 ││└DATA1     PREFACE  BAK      PC-CACHE COM   KILL     EXE   COMPRESS HLP
 │├PM         PROPTR   BAK      PCB6     COM   PCB1     EXE   DESKTOP  HLP
 ││└GETST     README   BAK      PCBDIR   COM   PCB2     EXE   PCBACKUP HLP
 │└WINDOWS    ROLODEX  BAK      PCFORMAT COM   PCB3     EXE   PCSECURE HLP
 │  └PIF      SAMPLE   BAK      PCRUN    COM   PCB4     EXE   PCSHELL  HLP
 130 Listed=  1760444 bytes    0 Selected=      0 bytes   13432832=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

To Move a Window:

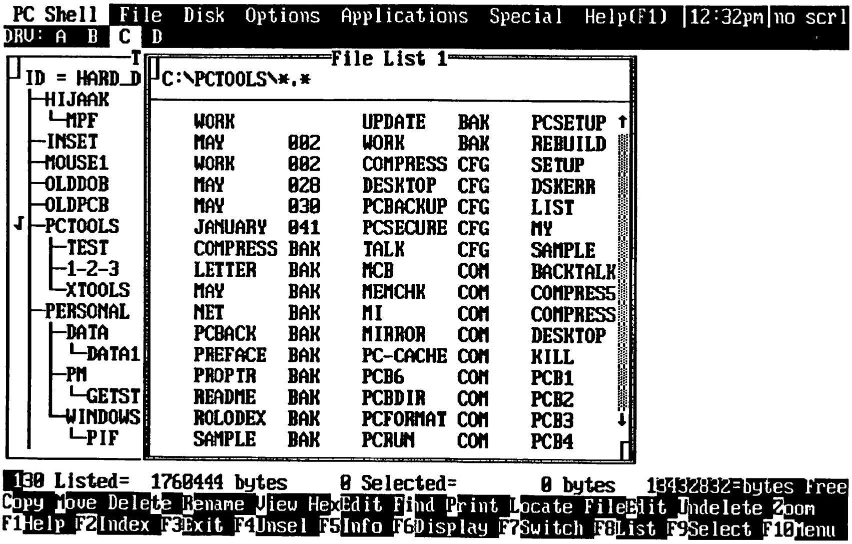
When you move a window its size doesn't change, just the window position.

Keyboard

1. Use the Up, Down, Left or Right arrow keys to reposition the window.
2. Press Enter when the window is where you want it. Press Esc to exit.

Mouse

1. Position the mouse pointer on the top window border (but not in the close box).
2. Click and then drag the window to reposition it.
3. Release the mouse button.

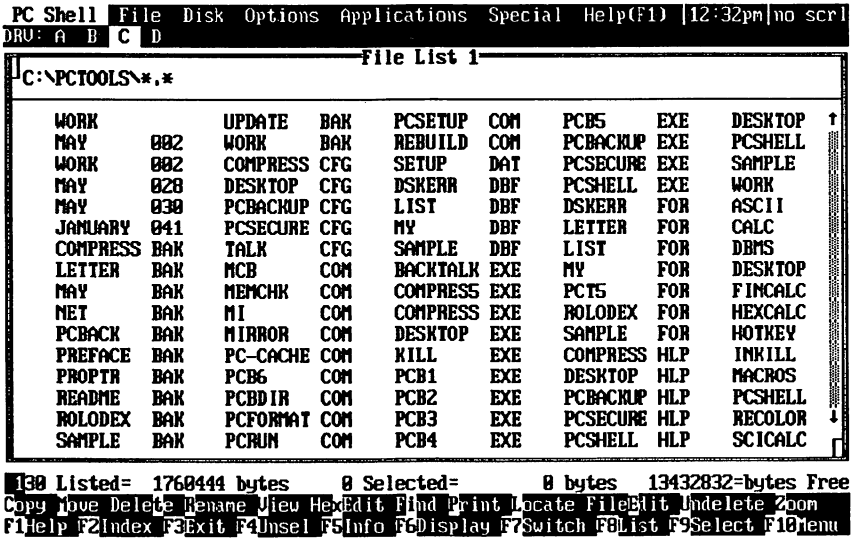

PC Shell File Disk Options Applications Special Help(F1) 12:32pm no scrl
DRV: A B C D
Copy Move Delete Rename View Hex Edit Find Print Locate File Edit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu

```
           T ═══════════File List 1══════════════════════════
ID = HARD_D  C:\PCTOOLS\*.*

├HIJAAK      WORK             UPDATE   BAK   PCSETUP ↑
│ └MPF       MAY      002     WORK     BAK   REBUILD
├INSET       WORK     002     COMPRESS CFG   SETUP
├MOUSE1      MAY      028     DESKTOP  CFG   DSKERR
├OLDDOB      MAY      030     PCBACKUP CFG   LIST
├OLDPCB      JANUARY  041     PCSECURE CFG   MY
├PCTOOLS     COMPRESS BAK     TALK     CFG   SAMPLE
│├TEST       LETTER   BAK     MCB      COM   BACKTALK
│├1-2-3      MAY      BAK     MEMCHK   COM   COMPRESS5
│└XTOOLS     NET      BAK     MI       COM   COMPRESS
├PERSONAL    PCBACK   BAK     MIRROR   COM   DESKTOP
│├DATA       PREFACE  BAK     PC-CACHE COM   KILL
││└DATA1     PROPTR   BAK     PCB6     COM   PCB1
│├PM         README   BAK     PCBDIR   COM   PCB2
││└GETST     ROLODEX  BAK     PCFORMAT COM   PCB3   ↓
│└WINDOWS    SAMPLE   BAK     PCRUN    COM   PCB4
│  └PIF
130 Listed=  1760444 bytes    0 Selected=       0 bytes   13432832=bytes Free
```

Note: To save the new window configuration for subsequent PC Shell sessions, use the Save Configuration command on the Options menu.

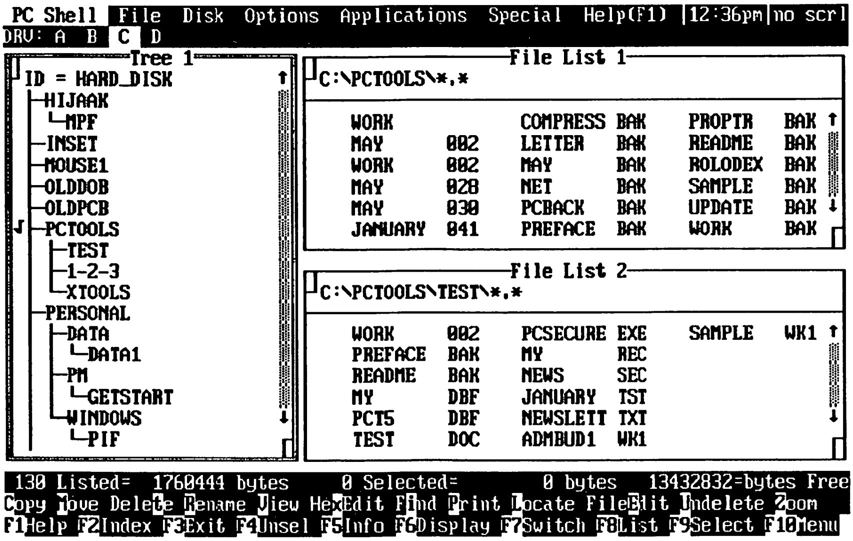
Zoom

You can also resize the active File and Tree List windows by selecting the Zoom command on the bottom line. When you have a File List active, Zoom expands the File List window to fill the screen so that you can see more of your file list. This command is especially useful if you are using the two list display option or if you want to see the files in a directory with a large number of files. Selecting Zoom again reduces the File List window to its size before you used Zoom.



```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |12:32pm|no scrl
DRV: A  B  C  D
                                 File List 1
C:\PCTOOLS\*.*

    WORK            UPDATE   BAK   PCSETUP  COM   PCB5     EXE   DESKTOP
    MAY       002   WORK     BAK   REBUILD  COM   PCBACKUP EXE   PCSHELL
    WORK      002   COMPRESS CFG   SETUP    DAT   PCSECURE EXE   SAMPLE
    MAY       028   DESKTOP  CFG   DSKERR   DBF   PCSHELL  EXE   WORK
    MAY       030   PCBACKUP CFG   LIST     DBF   DSKERR   FOR   ASCII
    JANUARY   041   PCSECURE CFG   MY       DBF   LETTER   FOR   CALC
    COMPRESS  BAK   TALK     CFG   SAMPLE   DBF   LIST     FOR   DBMS
    LETTER    BAK   MCB      COM   BACKTALK EXE   MY       FOR   DESKTOP
    MAY       BAK   MEMCHK   COM   COMPRESS EXE   PCT5     FOR   FINCALC
    NET       BAK   MI       COM   COMPRESS EXE   ROLODEX  FOR   HEXCALC
    PCBACK    BAK   MIRROR   COM   DESKTOP  EXE   SAMPLE   FOR   HOTKEY
    PREFACE   BAK   PC-CACHE COM   KILL     EXE   COMPRESS HLP   INKILL
    PROPTR    BAK   PCB6     COM   PCB1     EXE   DESKTOP  HLP   MACROS
    README    BAK   PCBDIR   COM   PCB2     EXE   PCBACKUP HLP   PCSHELL
    ROLODEX   BAK   PCFORMAT COM   PCB3     EXE   PCSECURE HLP   RECOLOR
    SAMPLE    BAK   PCRUN    COM   PCB4     EXE   PCSHELL  HLP   SCICALC

130 Listed=  1760444 bytes     0 Selected=      0 bytes   13432832=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

The Zoom command also expands the active Tree List window if you have previously resized it smaller or if you have two Tree Lists displayed:

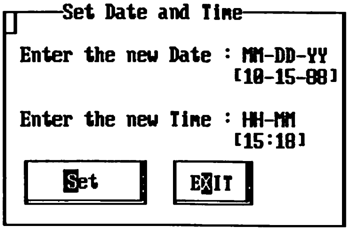


```
PC Shell  File  Disk  Options  Applications  Special  Help(F1) |12:36pm|no scrl
DRV: A  B  C  D
          Tree 1                             File List 1
 ID = HARD_DISK               C:\PCTOOLS\*.*
  ├HIJAAK
  │ └MPF                        WORK            COMPRESS BAK    PROPTR   BAK
  ├INSET                        MAY       002   LETTER   BAK    README   BAK
  ├MOUSE1                       WORK      002   MAY      BAK    ROLODEX  BAK
  ├OLDDOB                       MAY       028   NET      BAK    SAMPLE   BAK
  ├OLDPCB                       MAY       030   PCBACK   BAK    UPDATE   BAK
  ├PCTOOLS                      JANUARY   041   PREFACE  BAK    WORK     BAK
  │ ├TEST
  │ ├1-2-3                                   File List 2
  │ └XTOOLS                   C:\PCTOOLS\TEST\*.*
  ├PERSONAL
  │ ├DATA                       WORK      002   PCSECURE EXE    SAMPLE   WK1
  │ │ └DATA1                    PREFACE   BAK   MY       REC
  │ ├PM                         README    BAK   NEWS     SEC
  │ │ └GETSTART                 MY        DBF   JANUARY  TST
  │ └WINDOWS                    PCT5      DBF   NEWSLETT TXT
  │   └PIF                      TEST      DOC   ADMBUD1  WK1

 130 Listed=  1760444 bytes     0 Selected=      0 bytes   13432832=bytes Free
Copy Move Delete Rename View HexEdit Find Print Locate FileEdit Undelete Zoom
F1Help F2Index F3Exit F4Unsel F5Info F6Display F7Switch F8List F9Select F10Menu
```

Date/Time

The Date/Time command allows you to set the date and time on your computer's system clock.

1. Choose **Date/Time** from the Options menu. The Set Date and Time dialog box appears.



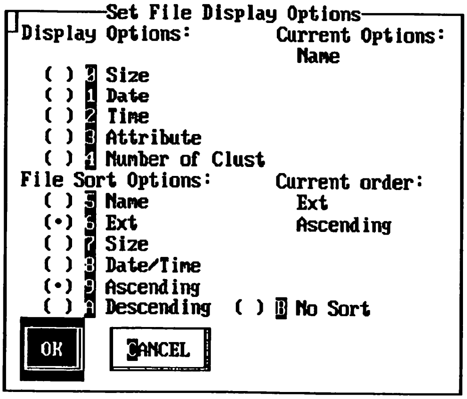
```
Set Date and Time

Enter the new Date : MM-DD-YY
                    [10-15-88]

Enter the new Time : HH-MM
                    [15:18]
```

2. Enter the new date using the MM-DD-YY format. Press Enter to accept the new date.
3. Enter the new time using the HH-MM format.
4. Select **Set** to set the new date and time or **Exit** to end the process.

File Display Options

The File Display Options command allows you to specify how the files are displayed and sorted in the File List window. PC Shell automatically lists the files alphabetically according to file names; however, you can use this command to change the display.

1. Choose **File Display Options**, or press F6, or click on "F6Display" on the Message Bar. PC Shell displays the Set File Display Options dialog box.



```
Set File Display Options
Display Options:              Current Options:
                                Name
  ( ) 0 Size
  ( ) 1 Date
  ( ) 2 Time
  ( ) 3 Attribute
  ( ) 4 Number of Clust
File Sort Options:            Current order:
  ( ) 5 Name                    Ext
  (•) 6 Ext                     Ascending
  ( ) 7 Size
  ( ) 8 Date/Time
  (•) 9 Ascending
  ( ) A Descending  ( ) B No Sort
```

Note: The Current display Options are listed on the top right of the screen.

2. Select any of the following options from the Set File Display Options dialog box. You may select more than one option.

Size: displays the file size.

Date: displays the file date.

Time: displays the file time.

Attribute: displays the file attributes.

Cluster number: displays the file's starting cluster number.

The current sort order is listed on the bottom right of the screen. You can choose a different File Sort Order from the following list. With each sort order, you may also choose if you want the sort to be ascending or descending. The default display is for no sorting to occur.

Name: lists the files according to their names.

Ext: lists the files according to their extensions.

Size: lists the files according to their size.

Date/Time: lists the files according to their date and time.

Ascending: lists the files according to the options specified, in ascending order.

Descending: lists the files according to the options specified, in descending order.

No Sort: no sorting occurs. The files are listed in the order they occur in the directory.

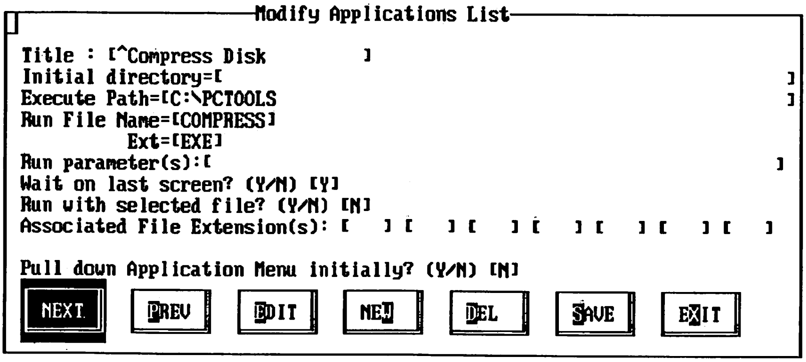
3. Select **OK** to view the files with the selected display and list order or **Cancel** to disregard the selected options and return to the main PC Shell screen.

Note: To save the File List window for subsequent PC Shell sessions, use the Save Configuration command in the Options menu.

Modify Applications List

The **Modify Applications List** allows you to change the list of programs found on the Applications pull-down menu. You can add, edit, or delete the applications.

1. Choose **Modify Applications List** from the Options menu. PC Shell displays the Modify Application List dialog box.



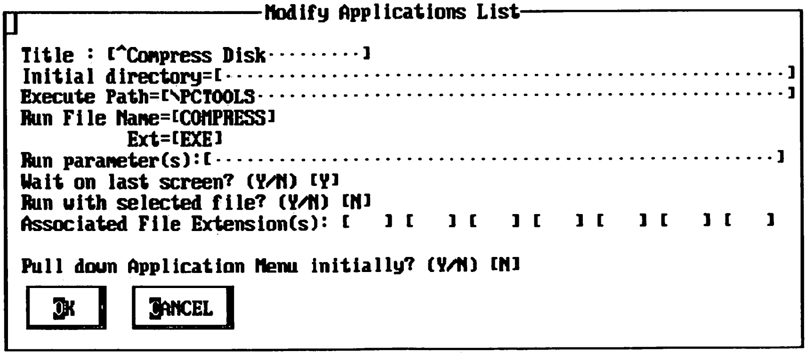
```
Modify Applications List
Title : [^Compress Disk        ]
Initial directory=[                                                    ]
Execute Path=[C:\PCTOOLS                                               ]
Run File Name=[COMPRESS]
          Ext=[EXE]
Run parameter(s):[                                                    ]
Wait on last screen? (Y/N) [Y]
Run with selected file? (Y/N) [N]
Associated File Extension(s): [   ] [   ] [   ] [   ] [   ] [   ] [   ]

Pull down Application Menu initially? (Y/N) [N]
```

2. Select one of the seven options:

Next: displays the next application from the list.
Prev: displays the previous application from the list.
Edit: edits the current application information.
New: adds programs to the Applications menu.
Del: deletes the application from the Applications menu.
Save: saves your Applications list.
Exit: ends the session and returns to the main PC Shell screen.

To Add or Edit an Application:

1. Select **Edit** to edit an existing application or **New** to create a new application. PC Shell displays the Modify Application List dialog box.



```
Title : [^Compress Disk·········]
Initial directory=[·············································]
Execute Path=[\PCTOOLS··········································]
Run File Name=[COMPRESS]
          Ext=[EXE]
Run parameter(s):[·············································]
Wait on last screen? (Y/N) [Y]
Run with selected file? (Y/N) [N]
Associated File Extension(s): [   ] [   ] [   ] [   ] [   ] [   ] [   ]

Pull down Application Menu initially? (Y/N) [N]
```

2. Enter the following information:

   Title: the text you want to appear on the Applications menu to represent the program. By using the ^ key (shift 6) before a letter, you may highlight that letter. The letter can then be used to start the application from the keyboard.

   Initial Directory: the path where the application and its associated files are found. This resets the current directory when the program is run so it can find its overlay and data files.

   Execute Path: the path where the application executes.

   Run File Name: the exact name and extension used to start the application.

   Run Parameter(s): any additional start-up switches you want passed on to the program. See the program manual for the application you wish to run for more information on start-up parameters.

   Wait on Last Screen?: pauses before returning to PC Shell. This is helpful when running a program that does not pause the screen before it terminates (i.e. CHKDSK). Type Y for yes or N for no to this question.

   Run with selected files?: runs the program using the selected file. For example, if Edlin were in the Applications pull-down Menu and a text file was selected in the File List window, the selected text file would be passed through to the editor when it was run. You could then begin editing the file. Type Y for yes or N for no to this question.

Pull down Application Menu initially?: If this is set to yes, PC Shell will display the Application menu on start-up, and the menu will then remain pulled down. This is helpful when using PC Shell primarily as an application launcher. This option will be set the same for all files in your Application list. Type **Y** for yes or **N** for no to this question.

File extension associations: file extensions that will automatically start the associated program. For example, if Lotus 1-2-3 is on your disk, PC Setup installed it into your Application menu, with a file extension association of .WK1 and .WKS. By pressing Ctrl-Enter when a file with one of these extensions is selected or highlighted, Lotus 1-2-3 will be started and the file passed to it. You can also double-click on one of these files to start Lotus 1-2-3.

3. Select **OK** to add or revise the application or **Cancel** to end the process and return to the Modify Applications List dialog box.

Once the application has been added to the Applications pull-down Menu it is available for execution. Please refer to the Applications Menu chapter for more information on running the program.

Save Configuration

The Save Configuration command allows you to save all your PC Shell optional settings. This is convenient if you've changed the screen colors, added items to the Applications menu, or other changed program options and you want PC Shell to remember them from session to session.

- Choose **Save Configuration** from the Options menu. Your options are saved in the configuration file, PCSHELL.CFG.

To Reset the Configuration for PC Shell:

- Locate and delete the PCSHELL.CFG file. This will reset all saved changes in program configuration to the original default settings.

Re-Read the Tree

PC Shell will always save a copy of the directory tree for a drive in the file PCSHELLd.TRE, where "d" is the drive letter. For example, PCSHELLC.TRE will contain the directory tree for drive C, PCSHELLF.TRE will contain the directory tree for drive F, and so on. When you tell PC Shell to change drives (press Ctrl-drive letter or click on the drive letter on the Drive Command Line), it will look to see if a tree file exists for that drive, and if so read the tree from the file rather than from the drive itself. This has been done to make PC Shell as fast as possible when switching drives, especially on networks. If you want PC Shell to reread the drive because the directory structure has changed, choose Re-Read the Tree from the Options menu.

Tree Display on Networks

If you are connected to a Novell network and you use PC Shell to look at the network server, it will only display directories in the tree window for which you have at least read privileges. This makes PC Shell much easier to use on a network as you only see the directories you use, rather than all the potentially hundreds of directories on the server.

Quick RUN

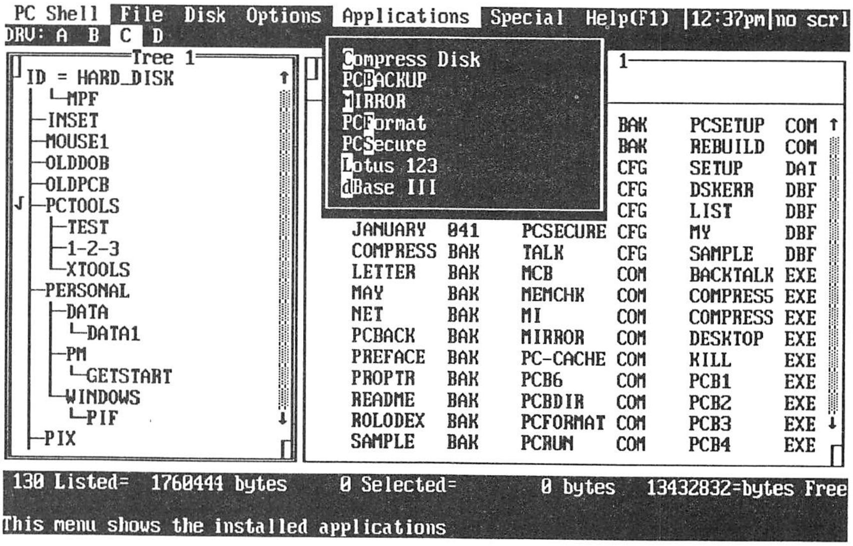
The Quick RUN command is available on the Options pull-down menu only when you are running PC Shell in Shell mode. If you are running PC Shell memory resident, this command will not appear on the menu. Choosing Quick RUN toggles this setting on or off. When ON (the default setting), a checkmark appears next to the command on the pull-down menu.

The Quick RUN command works as follows: When ON, PC Shell does not free up memory prior to running an application (either from the Applications Menu or by double-clicking on a file name). Also, the memory will not be freed when you select DOS from the File menu. Memory is freed when you leave PC Shell with the Exit command.

PC Shell takes about 200K of memory when active as a DOS Shell. As long as the programs you want to run do not use all of your available memory, the Quick RUN command allows them to be run faster since no memory swapping takes place prior to running them. If your programs won't run or you don't have enough memory to load a large data file, choose the Quick RUN command again to turn the setting OFF. The memory is freed prior to running your application. There will be a slight pause before the application is run, but nearly all of your computer's memory will be available to the program.

The Applications Menu

Choosing **Applications** from the horizontal menu bar displays the Applications pull-down menu.



```
 PC Shell  File  Disk  Options  Applications  Special  Help(F1) |12:37pm|no scrl
DRV: A  B  C  D
 ===========Tree 1=====        Compress Disk         1-----------------------
 ID = HARD_DISK       ↑        PCBACKUP
   └MPF                        MIRROR
  ├INSET                       PCFormat              BAK    PCSETUP   COM ↑
  ├MOUSE1                      PCSecure              BAK    REBUILD   COM
  ├OLDDOB                      Lotus 123             CFG    SETUP     DAT
  ├OLDPCB                      dBase III             CFG    DSKERR    DBF
 √├PCTOOLS                                           CFG    LIST      DBF
   ├TEST                JANUARY  041     PCSECURE    CFG    MY        DBF
   ├1-2-3               COMPRESS BAK     TALK        CFG    SAMPLE    DBF
   └XTOOLS              LETTER   BAK     MCB         COM    BACKTALK  EXE
  ├PERSONAL             MAY      BAK     MEMCHK      COM    COMPRESS  EXE
   ├DATA                NET      BAK     MI          COM    COMPRESS  EXE
     └DATA1             PCBACK   BAK     MIRROR      COM    DESKTOP   EXE
   ├PM                  PREFACE  BAK     PC-CACHE    COM    KILL      EXE
     └GETSTART          PROPTR   BAK     PCB6        COM    PCB1      EXE
   └WINDOWS             README   BAK     PCBDIR      COM    PCB2      EXE
     └PIF             ↓ ROLODEX  BAK     PCFORMAT    COM    PCB3      EXE ↓
  ├PIX                  SAMPLE   BAK     PCRUN       COM    PCB4      EXE
 130 Listed=  1760444 bytes    0 Selected=       0 bytes   13432832=bytes Free
This menu shows the installed applications
```

Use the names in the Application menu to execute user installed programs. We have already installed the various PC Tools Deluxe programs on the menu for you. Lotus 1-2-3, and dBASE are also installed on the Applications list if you use PC Setup and they exist on your hard drive.

Note: Please see "Modify Application List" in the Option Menu section for information on adding, editing or deleting programs from the Application pull-down Menu. These programs can also be run from the DOS command line.

Running Programs

You can run programs from PC Shell only if you executed PC Shell from the DOS prompt. If you hotkeyed into PC Shell while running another program, or if you selected PC Shell from the PC Tools Desktop menu, programs will not run.

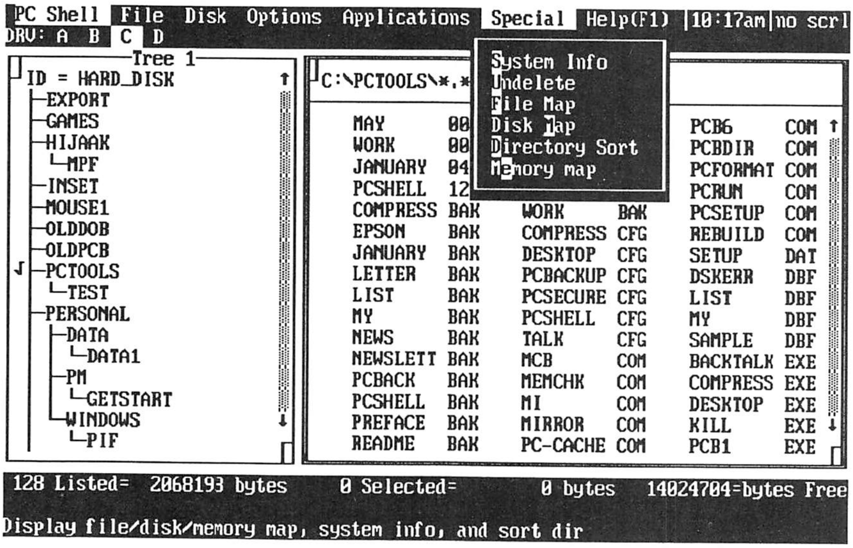
- Choose the program you want to run from the Applications menu. The program will execute.

After you have finished using the program, you will be returned to PC Shell. You may be prompted to press any key or mouse button to return to PC Shell upon completion of the program.

Note: Programs in the Application Menu may be set to load a selected file upon execution. For example, Edlin could be set up to edit a file selected in the File list display. To do this, choose Edlin (assuming you have already put it into your Applications menu) after the file is selected. Please see the "Modify Application List" section for more information on how to set this up.

The Special Menu

Choosing **Special** from the horizontal menu bar displays the Special pull-down menu.

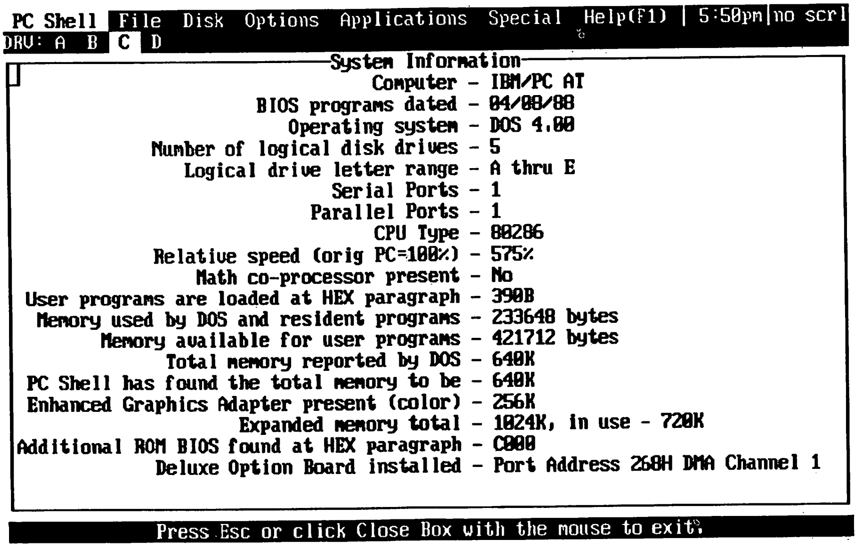


```
ID = HARD_DISK          C:\PCTOOLS\*.*
 ├EXPORT                 MAY      00                  PCB6     COM
 ├GAMES                  WORK     00                  PCBDIR   COM
 ├HIJAAK                 JANUARY  04                  PCFORMAT COM
 │ └MPF                  PCSHELL  12                  PCRUN    COM
 ├INSET                  COMPRESS BAK  WORK     BAK   PCSETUP  COM
 ├MOUSE1                 EPSON    BAK  COMPRESS CFG   REBUILD  COM
 ├OLDDOB                 JANUARY  BAK  DESKTOP  CFG   SETUP    DAT
 ├OLDPCB                 LETTER   BAK  PCBACKUP CFG   DSKERR   DBF
 ├PCTOOLS                LIST     BAK  PCSECURE CFG   LIST     DBF
 │ └TEST                 MY       BAK  PCSHELL  CFG   MY       DBF
 ├PERSONAL               NEWS     BAK  TALK     CFG   SAMPLE   DBF
 │ ├DATA                 NEWSLETT BAK  MCB      COM   BACKTALK EXE
 │ │ └DATA1              PCBACK   BAK  MEMCHK   COM   COMPRESS EXE
 │ ├PM                   PCSHELL  BAK  MI       COM   DESKTOP  EXE
 │ │ └GETSTART           PREFACE  BAK  MIRROR   COM   KILL     EXE
 │ └WINDOWS              README   BAK  PC-CACHE COM   PCB1     EXE
 │   └PIF
128 Listed=  2068193 bytes    0 Selected=      0 bytes   14024704=bytes Free
Display file/disk/memory map, system info, and sort dir
```

System Info

The System Info command provides useful information about your computer.

- Select **System Info** from the Special menu. The System Information dialog box appears on the screen.



```
                         System Information
                           Computer - IBM/PC AT
                 BIOS programs dated - 04/00/88
                    Operating system - DOS 4.00
         Number of logical disk drives - 5
            Logical drive letter range - A thru E
                         Serial Ports - 1
                       Parallel Ports - 1
                             CPU Type - 80286
         Relative speed (orig PC=100%) - 575%
           Math co-processor present - No
User programs are loaded at HEX paragraph - 390B
 Memory used by DOS and resident programs - 233648 bytes
      Memory available for user programs - 421712 bytes
            Total memory reported by DOS - 640K
PC Shell has found the total memory to be - 640K
Enhanced Graphics Adapter present (color) - 256K
                   Expanded memory total - 1024K, in use - 720K
Additional ROM BIOS found at HEX paragraph - C000
            Deluxe Option Board installed - Port Address 268H DMA Channel 1

            Press Esc or click Close Box with the mouse to exit
```

The System Info screen contains the following information about your computer:

Computer: PC Shell can "recognize" all of the IBM models and many PC compatibles by looking for a signature in the ROM/BIOS. If PC Shell does not know what computer this is, it does not display this line.

The BIOS programs are dated: displays when the built-in BIOS (Basic Input/Output System) firmware was last changed. This can be useful for comparing computers, since the manufacturer should change the BIOS date if the computer's BIOS is updated in any way.

Operating System: displays which version of DOS you've used to boot the computer.

Number of logical disk drives: displays how many drives are connected, including floppy drives, hard disks, RAM disks (electronic disks), etc. This number is also controlled with the LASTDRIVE option of your CONFIG.SYS file. Usually the default is E or 5 drives, even if you really don't have five drives.

Logical drive letter range: displays which drive letter names are available for the drives you have connected.

Serial ports: displays the number of serial ports connected.

Parallel ports: displays the number of parallel ports connected.

CPU Type: displays the type of processor installed (8088, 80286, etc).

Relative Speed: displays the CPU processing speed as measured against the original IBM PC running at 4.77 MHZ. PC Shell performs a variety of machine instructions representative of normal application programming. Because speed tests vary, the reported relative speed may slightly differ from other applications which attempt to measure the CPU processing speed.

Math co-processor present: displays if a math co-processor is found. PC Shell looks for math co-processors regardless of system switch settings.

User programs are loaded at HEX paragraph, and Memory used by DOS and resident programs: displays the size of the operating system and resident programs. These two items are related since the operating system uses the lowest area of memory and user programs are loaded directly after this. The larger these numbers are, the more memory is being used by the operating system (along with any resident programs loaded before PC Shell) and the less memory is available for user programs. If you have other resident programs that were started after PC Shell, they will not be included as operating system memory.

Memory available for user programs: displays the amount of memory available for user programs.

Total memory reported by DOS: displays the amount of memory which DOS believes to be available.

PC Shell has found the total memory to be: displays the amount of memory available. PC Shell ignores any memory switch settings and determines for itself how much memory is available in the computer (up to 640K). If the two numbers disagree, then you know that either the switches in your computer are set wrong, or a program such as a RAM disk or print spooler has taken some of the memory for itself.

Video Display type: indicates the type of display adapter being used. PC Shell recognizes CGA, EGA, Mono, VGA, and PGA adapters.

Additional ROM BIOS found at HEX paragraph: displays whether or not expansion boards are plugged into your PC that contain "extensions" to the PC BIOS. If none are found, this line will not be displayed.

Deluxe Option Board installed: displays the port address and DMA channel in which the Deluxe Option Board is installed.

Undelete

The Undelete command allows you to recover files that have been accidentally deleted. Undelete can also recover deleted subdirectories. If you accidentally delete a file, you should always use Undelete immediately to recover the file before any information is lost, or overwritten. With the Create command, Undelete can even recover data that no longer has a file name in the directory. You can even reorder the clusters you select during a file create to give you maximum flexibility in recovering lost data.

Note: On diskettes, we suggest that you always copy the disk containing the file you want to undelete onto a new disk and undelete the file from the new disk. (To do this you must use a disk copy program rather than a file copy program, as file copy programs cannot copy deleted files.) By doing this, you cannot inadvertently damage your original copy of a disk. Once the undelete is successful, you can copy the undeleted file from the backup disk to the original.

PC Shell has three methods for recovering deleted files and subdirectories:

- Delete Tracking Method
- Standard DOS Method
- Create a File Method

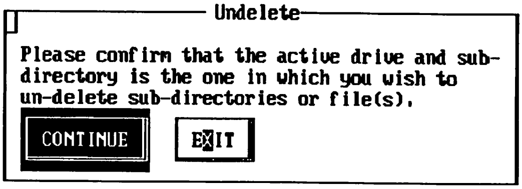
Each method is described in order.

The Delete Tracking Method of File Undeletion

The Delete Tracking method works by installing a small resident program with the Mirror program each time you turn on your computer. For best results on undeleting a file, we recommend installing the Delete Tracking option with the Mirror program in your AUTOEXEC.BAT file. Please refer to the Mirror chapter for more information on installing the Delete Tracking option.

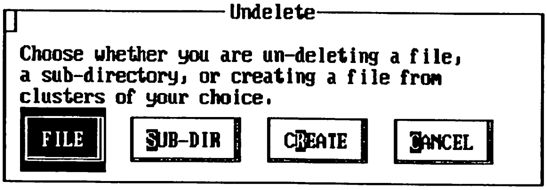
Note: If you use PC Setup with our recommended options to install PC Shell on your hard disk, this has been done automatically. Whenever DOS deletes a file, the resident program saves the deleted file's address information in a special file called PCTRACKR.DEL in the Root directory of your hard disk. If your hard disk is partitioned, the PCTRACKR.DEL file resides in the first partition. The Delete Tracking method can even recover fragmented files, providing the data has not been overwritten.

1. Select the drive and subdirectory that contains the file(s) to undelete.
2. Choose **Undelete** from the Special menu, or press U, or click on "Undelete" on the Command Bar. The following dialog box appears.



Please confirm that the active drive and sub-directory is the one in which you wish to un-delete sub-directories or file(s).

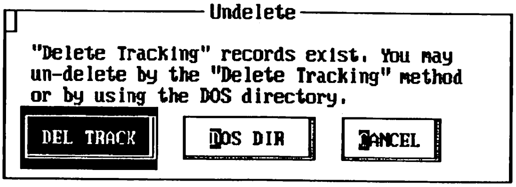
3. Select **Continue** to confirm the drive and subdirectory selection or **Exit** to return to the main PC Shell screen.



Choose whether you are un-deleting a file, a sub-directory, or creating a file from clusters of your choice.

4. Select whether you will be undeleting a **File** or a **Subdirectory.** The Undelete dialog box appears. **Cancel** will return you to the main PC Shell screen.

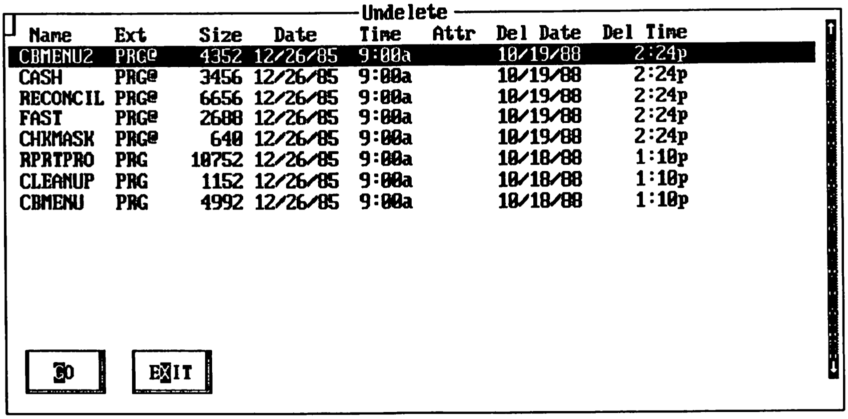
   Note: Subdirectories are undeleted in the same manner as files. Please follow the same procedure to undelete a subdirectory as you would to undelete a file.



"Delete Tracking" records exist. You may un-delete by the "Delete Tracking" method or by using the DOS directory.

5. In the Undelete dialog box, select the **Del Track** option to use the Delete Tracking method of file undeletion. Select **Cancel** to terminate the Undelete process and return to the main PC Shell screen.

   Note: If the preceding dialog box does not appear, you must use the DOS DIR method of file recovery. Please see "The Standard DOS Method of File undeletion," in the following section for more information.



```
                                 Undelete
 Name     Ext    Size  Date     Time   Attr  Del Date  Del Time
 CBMENU2  PRG@   4352 12/26/85  9:00a        10/19/88    2:24p
 CASH     PRG@   3456 12/26/85  9:00a        10/19/88    2:24p
 RECONCIL PRG@   6656 12/26/85  9:00a        10/19/88    2:24p
 FAST     PRG@   2688 12/26/85  9:00a        10/19/88    2:24p
 CHKMASK  PRG@    640 12/26/85  9:00a        10/19/88    2:24p
 RPRTPRO  PRG   10752 12/26/85  9:00a        10/18/88    1:10p
 CLEANUP  PRG    1152 12/26/85  9:00a        10/18/88    1:10p
 CBMENU   PRG    4992 12/26/85  9:00a        10/18/88    1:10p
```

Files that can be undeleted will be listed with the first file highlighted for undeletion. You may move to different files with a mouse using the Scroll bar on the right, or use the arrow keys on the keyboard. Once the file is highlighted for undeletion, select GO or press G to undelete it. After all desired files have been undeleted, you are returned to the main PC Shell screen. To quit and return to the main PC Shell screen select **Exit** at any time.

Note: The "@" character next to the file name indicates whether or not PC Shell can automatically undelete the file. If you are using the Delete Tracking method this means that none of the file's clusters are currently being used by any other files. If the file does not have an "@" next to it, you cannot recover using the Delete Tracking method. The "*" character next to the file name means that some of the clusters are available, but not all of them. If you don't see either of the characters, it means recovery is not possible.

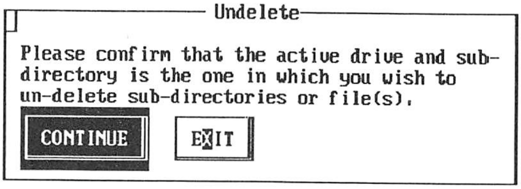
After you've undeleted a file, you should try using the file to see if the undelete was successful.

The Standard DOS Method of File Undeletion

Use this method when the Delete Tracker was not installed prior to deleting the file.

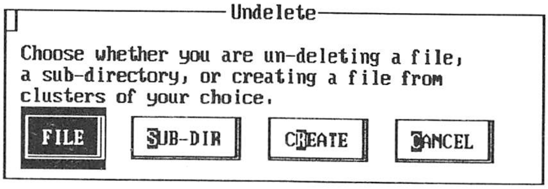
Note: The Delete Tracking method is always more reliable, so we suggest you use it, rather than the DOS method whenever possible. To use the Delete Tracking method, you must be using Mirror with the /T option. Please refer to the Mirror chapter for more information on installing the Delete Tracking option.

1. Select the drive and subdirectory that contains the file to undelete.
2. Choose **Undelete** from the Special menu. The Undelete dialog box appears.



Please confirm that the active drive and sub-directory is the one in which you wish to un-delete sub-directories or file(s).

3. Select **Continue** to confirm the drive and subdirectory selection or **Exit** to return to the main PC Shell screen. The following dialog box appears.

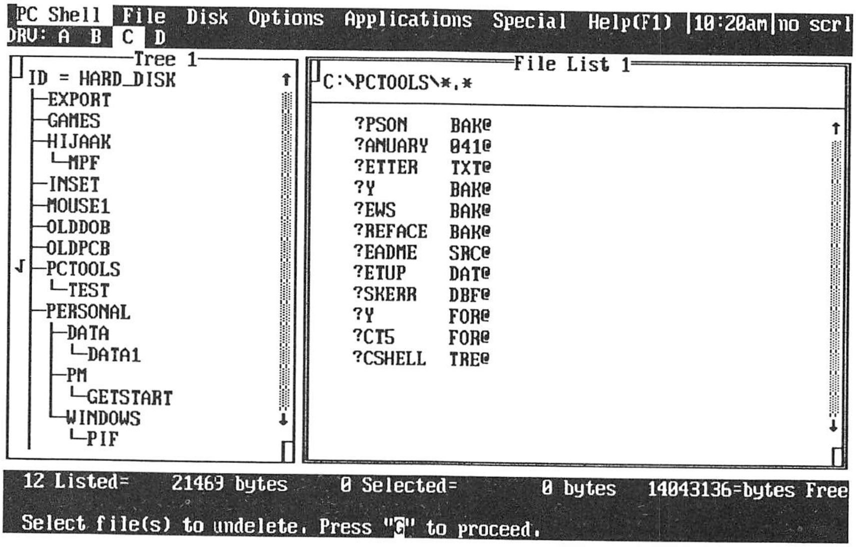


Choose whether you are un-deleting a file, a sub-directory, or creating a file from clusters of your choice.

4. Select whether you will be undeleting a **File** or a **Subdir.** **Cancel** will return you to the main PC Shell screen.

   Note: Subdirectories are undeleted in the same manner as files. Please follow the same procedure to undelete a subdirectory as you would to undelete a file.

5. Select **DOS DIR** to use the Standard DOS Method of file undeletion. The main PC Shell screen appears for you to select the files to undelete.



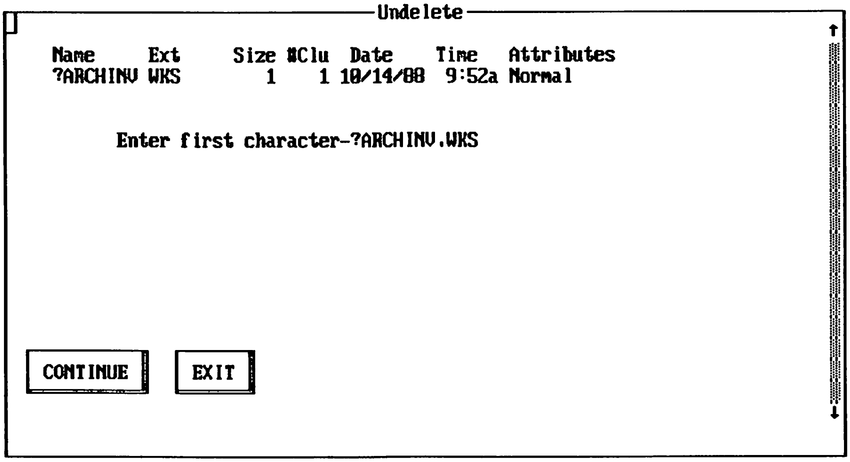
```
C:\PCTOOLS\*.*

?PSON     BAK
?ANUARY   041
?ETTER    TXT
?Y        BAK
?EWS      BAK
?REFACE   BAK
?EADME    SRC
?ETUP     DAT
?SKERR    DBF
?Y        FOR
?CT5      FOR
?CSHELL   TRE

12 Listed=    21469 bytes    0 Selected=       0 bytes    14043136=bytes Free
Select file(s) to undelete. Press "C" to proceed.
```

6. Select the file(s) to Undelete from the File List window. After the files are selected to undelete, select **GO** or press **G** to proceed.

   Note: If there are no files listed, you may not be looking in the correct Subdirectory, or no files have been deleted, or the deleted file entries were completely overwritten with new files. If files do exist on the screen, the first character of the file name will be missing and you will need to supply it. You may also see one of the following characters next to the file name:

   - The "@" character next to the file name indicates whether or not PC Shell can automatically undelete the file. You may use the Automatic Method of file recovery.
   - The "*" character next to the file name means that some of the clusters are available, but not all of them. This will require the Manual Method of recovery.
   - If you don't see either of the characters, it means recovery is not possible.

7. The file to undelete will be displayed in the Undelete dialog box along with general file information.



```
Name      Ext     Size #Clu  Date     Time   Attributes
?ARCHINV  WKS        1    1 10/14/88  9:52a Normal

        Enter first character-?ARCHINV.WKS
```

8. Enter the first letter of the file name and select **Continue** to proceed or Exit to select the next file you want to recover. If no other files exist to undelete, Exit will return you to the main PC Shell screen.

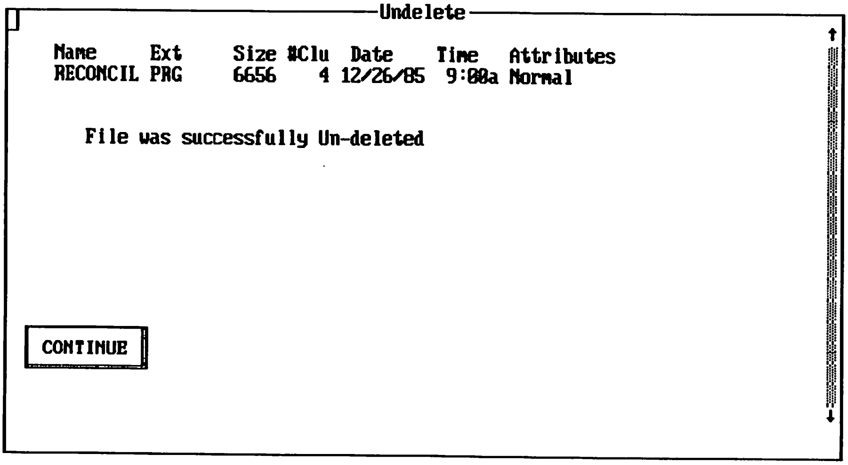
Note: If the file to undelete can not be automatically recovered, you must use the manual method of recovery.

9. Select **Automatic** if the @ symbol exists next to the file name or **Manual** if it does not. **Cancel** will return you to the main PC Shell screen.

Automatic Method of Recovery

If the file can be undeleted with the Automatic Method of Recovery, the Undelete dialog box will inform you that the file was successfully undeleted and allow you to select **Continue** to proceed with another file for undeletion. If the file cannot be recovered using the Automatic Method of Recovery, you will be prompted to use the Manual Method of Recovery.

Once all selected files have been successfully undeleted, you are returned to the main PC Shell screen. Selecting **Exit** will end the current file undeletion and return you to the next file to undelete or the main PC Shell screen, depending on if any additional files are left to undelete.

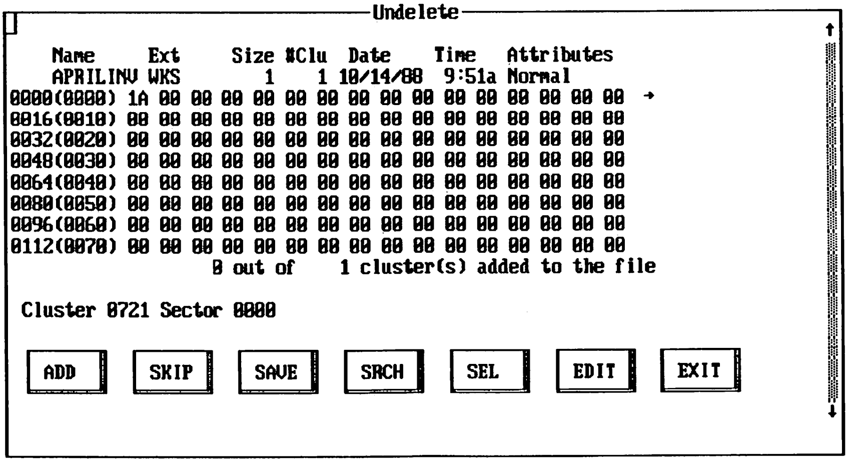


```
Name      Ext     Size #Clu  Date      Time   Attributes
RECONCIL  PRG     6656    4  12/26/85  9:00a  Normal

   File was successfully Un-deleted
```

After you've undeleted a file, you should try using the file to see if the undelete was successful.

Manual Method of Recovery

When using the Manual Method of Recovery, you'll see a display similar to the View/Edit display. PC Shell displays, in order, the sectors that most likely belong to the file.



```
   Name      Ext      Size #Clu  Date     Time   Attributes
   APRILINV WKS          1    1 10/14/88  9:51a Normal
0000(0000) 1A 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  →
0016(0010) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0032(0020) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0048(0030) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0064(0040) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0080(0050) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0096(0060) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0112(0070) 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   0 out of    1 cluster(s) added to the file

 Cluster 0721 Sector 0000
```

The following keyboard commands are available for Manual File Undeletion:

PgUp: moves the display to the previous quarter sector
PgDn: moves the display to the next quarter sector.
Home: moves to the beginning of the cluster.
End: moves to the end of the cluster.

The following commands are available for Manual File undeletion:

Add: adds the cluster to file and moves to the next cluster.

Skip: skips to the next cluster, not adding the cluster to a file.

Save: saves clusters to the file being undeleted.

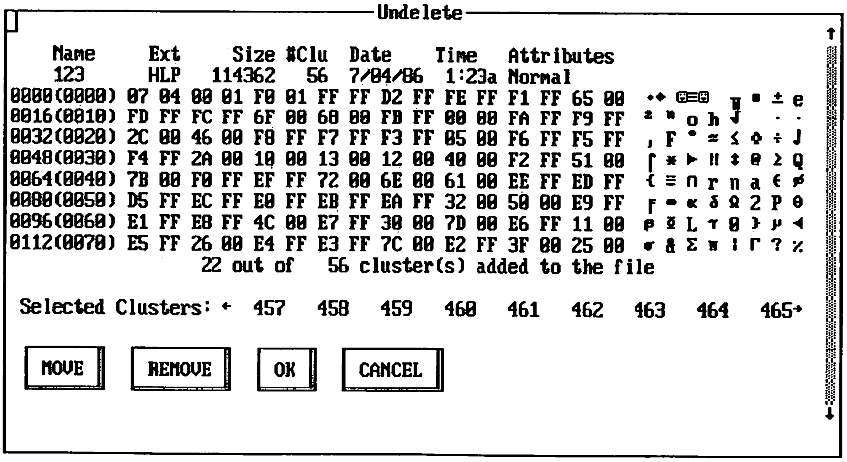
Srch: displays the Undelete dialog box and allows you to search for additional clusters that may contain information on the file to undelete. See the Find Files section for more information on this dialog box.

Sel: Allows you to enter and select a new cluster. Select **Continue** to select the new cluster and return to the Undelete dialog box or **Exit** to terminate the cluster move.

Edit: Allows you to reorder added clusters to a deleted file. You may move or remove an added cluster. Once the move or remove is finished, select **OK** to proceed with the undeletion. Selecting **Cancel** will return you to the main Undelete dialog box with no action taken.

- To Move a cluster, highlight the cluster to be moved with the Left or Right arrow keys or mouse. Select **Move** and move the highlighted cluster to a new position in the list. Select **OK** when the cluster is relocated. Selecting **Cancel** will terminate the move process.

- To Remove a cluster, highlight the cluster to be removed with the Left or Right arrow keys or mouse. Select **Remove.** The cluster is now removed from the list.



```
   Name      Ext      Size #Clu  Date      Time   Attributes
   123       HLP    114362   56  7/04/86   1:23a Normal
0000(0000) 07 04 00 01 F0 01 FF FF D2 FF FE FF F1 FF 65 00  •◆ ☺═☺ ╥ ■ ± e
0016(0010) FD FF FC FF 6F 00 68 00 FB FF 00 00 FA FF F9 FF  ² ■ o h ╛  · ·
0032(0020) 2C 00 46 00 F8 FF F7 FF F3 FF 05 00 F6 FF F5 FF  , F ° ≈ ≤ ♠ ÷ J
0048(0030) F4 FF 2A 00 10 00 13 00 12 00 40 00 F2 FF 51 00  ⌠ * ► ‼ ↕ @ ≥ Q
0064(0040) 7B 00 F0 FF EF FF 72 00 6E 00 61 00 EE FF ED FF  { ≡ ∩ r n a ∈ ø
0080(0050) D5 FF EC FF E0 FF EB FF EA FF 32 00 50 00 E9 FF  ╒ ∞ α δ Ω 2 P Θ
0096(0060) E1 FF E8 FF 4C 00 E7 FF 30 00 7D 00 E6 FF 11 00  ß Φ L τ 0 } µ ◄
0112(0070) E5 FF 26 00 E4 FF E3 FF 7C 00 E2 FF 3F 00 25 00  σ & Σ π | Γ ? %
                  22 out of   56 cluster(s) added to the file

 Selected Clusters: ←  457   458   459   460   461   462   463   464   465→
```

Exit returns you to the Undelete dialog box. Select **Continue** to return to the main PC Shell screen.

Note: The total number of clusters that need to be added to complete the file is displayed along with the current number of clusters being added. This information is useful in determining the correct cluster count as the new file is built. The cluster and sector number is also displayed.

1. Select **Add** if the displayed cluster appears to be part of the deleted file. This adds the cluster to the file being recovered, then shows you the next cluster to consider.

- Select **Skip** if you don't want to add the current cluster to the file. The next cluster is displayed.

  If you accidentally add a cluster to the file and then decide it wasn't the right one, you can remove it by selecting **Edit.**

  If your hard disk was fragmented, the next cluster PC Shell picks for you might not be the right one. If you are trying to undelete a text file, you might be able to find the next cluster using the **Srch** command. You can also reorder the clusters in the file with the **Edit** function.

If you look at the text at the bottom of the current cluster using the cursor movement keys, you might see the beginning of a sentence, for example "If your hard disk was frag." Selecting **Add** adds this to the file and displays the next cluster. If the next cluster doesn't start with the characters "mented" (the rest of the word "fragmented"), you know this couldn't be the right cluster. So instead of selecting **Add** again to add this incorrect cluster, select **Srch** to search for the proper text on the hard disk. When it is found, you can continue adding clusters, selecting **Add** until the file is completely recovered.

After you have recovered your file, we recommend that you run Compress often to compress the sectors, placing them in one contiguous part of the hard disk and use the Delete Tracking option of Mirror so that you won't have to manually recover files in the future.

2. Select **Save** when you think you've selected all of the clusters that belong to the file. This rebuilds and saves the file using the clusters you've selected.
3. Select **Exit** to return to the Undelete dialog box. It will inform you if the file was successfully undeleted. Select **Continue** to return to the main PC Shell screen.

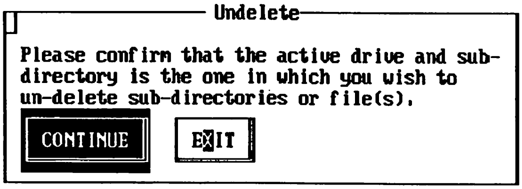
After you've undeleted a file, you should try using the file to see if the undelete was successful. If the wrong clusters were selected, the file will not contain the same information as the original file. If you have problems with an undeleted file, you can delete it and try to undelete it again, choosing different clusters this time.

The Create File Method of File Undeletion

If you are reasonably sure that the file you want to undelete is still on the disk, but no file name is found by either the Delete Tracking method or the Standard DOS method of undeletion, then the Create File method may offer your best hope of recovering the data. The Create File method will build a new file name and then allow you to add clusters to it.

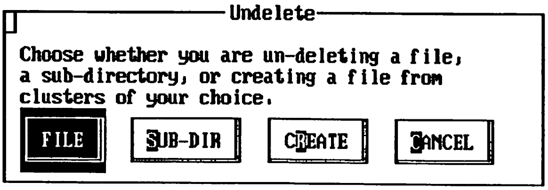
Note: ASCII (text) files are the intended files for the Create File method. Binary files usually cannot be pieced back together as it is too hard to determine which clusters to add.

1. Select the drive and subdirectory that used to contain the file to undelete.
2. Choose **Undelete** from the Special pull-down Menu. The following dialog box appears.



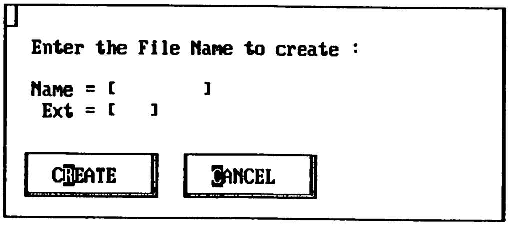
Please confirm that the active drive and sub-directory is the one in which you wish to un-delete sub-directories or file(s).

3. Select **Continue** to confirm the drive and subdirectory selection or select **Exit** to return to the main PC Shell screen. The following dialog box appears when you select Continue.



Choose whether you are un-deleting a file, a sub-directory, or creating a file from clusters of your choice.

4. Select **Create** from the Undelete dialog box and the following dialog box appears. **Cancel** terminates the undelete process.



Enter the File Name to create :

Name = [ ]
Ext = [ ]

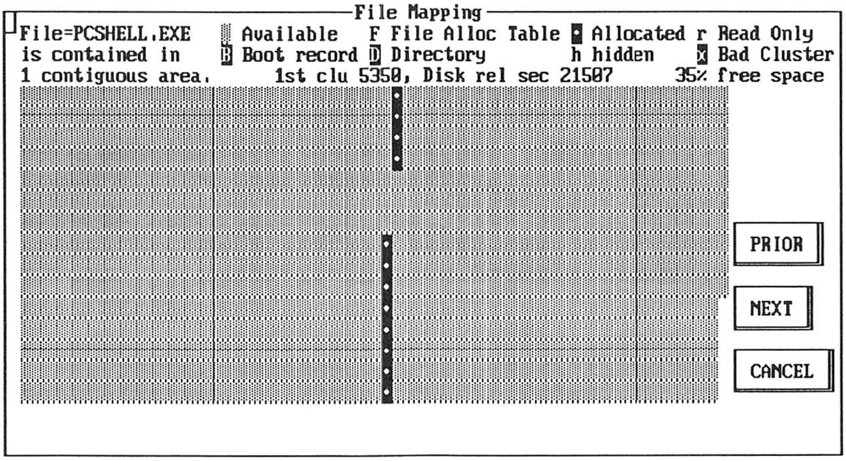
5. Enter the desired file name and extension for the new file. Select **Create** to build the new file or **Cancel** to return to the main PC Shell screen.

   Refer to the Manual Method of Recovery section, preceding this section, to continue building and editing the new file.

File Map

The File Map command allows you to see which clusters are allocated by specific files.

1. Select the subdirectory you want to map. The files for that directory appear in the File List window.
2. Select the file(s) you want to map. If you don't select any files, PC Shell assumes you want to start with the first entry in the directory and map all the files contained in that subdirectory.
3. Select **File Map** from the Special menu. The File Map appears, displaying the location of the selected file(s) only.



```
                                 File Mapping
File=PCSHELL.EXE     ▒ Available    F File Alloc Table ● Allocated r Read Only
is contained in      B Boot record  D Directory        h hidden    ☒ Bad Cluster
1 contiguous area.      1st clu 5350, Disk rel sec 21507         35% free space
```

Next: displays the location of the next file.

Prior: displays the location of the previous file.

Exit: returns to the main PC Shell screen.

Note: When mapping a file, if you see that the clusters are fragmented (stored in random sectors on the disk) you can use the Compress program to unfragment your hard disk. It takes longer to access a file when its clusters are fragmented due to increased movement of the drive head. Compress optimizes disk performance and makes file undeleting as reliable as possible.

Each position in the grid represents one cluster. DOS always allocates disk space for files a cluster at a time. Clusters can be different sizes depending on the disk. On single–sided floppy disks, one cluster equals one sector. On double–sided disks, one cluster equals two sectors. On hard disks, clusters can be 4, 8 or more sectors long. Regardless of the size of a cluster for any given disk, DOS always sets aside disk space by clusters, not sectors.

For floppy disks with 40 tracks per side, PC Shell shows the corresponding track numbers above the grid (Track 0, 5, 10, 15, etc.). If you're mapping a single–sided disk, the actual sector numbers are also shown on the left. For hard disks, the clusters are shown in a large grid, without track numbers (since different hard disks use tracks and sectors in different ways).

Each space in the grid contains one of the following symbols, showing what that cluster is used for:

[] **Available:** This cluster is not being used and is available for file storage.

B: **Boot record:** This cluster contains the boot record. Every disk contains a boot record, even if it is not capable of booting DOS.

F: **File Alloc Table:** This cluster holds part of the File Allocation Table (FAT), which is used to keep track of where files are stored on the disk and which clusters are available.

D **Directory:** This cluster is part of the disk's directory.

[•] **Allocated:** This cluster is part of a file.

h: **Hidden:** This cluster is part of a hidden file.

r **Read Only:** This cluster is part of a Read–Only file.

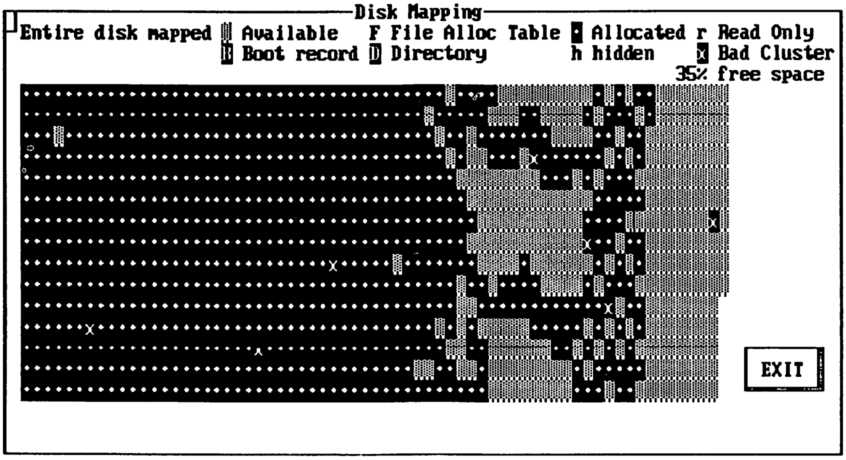
[x] **Bad Cluster:** This cluster has been marked as bad and is unusable.

Note: The codes in the manual may be different from screen codes, as IBM graphics characters are used to make the display more readable.

Disk Map

The Disk Map command allows you to see which sectors, or "clusters" of a disk are used by which files and which sectors are free for use. This is helpful in seeing if your files are fragmented (made up of sectors from random places on the hard disk). Fragmented files can cause poor system performance.

1. Select the drive you want to map.
2. Choose **Disk Map** from the Special menu. PC Shell displays the Disk Map screen. Select **Exit** to return to the main PC Shell screen.



Disk Mapping

Entire disk mapped

35% free space

Note: Each position in the grid represents one cluster. DOS always allocates disk space for files a cluster at a time. Clusters can be different sizes depending on the disk. On single–sided floppy disks, one cluster equals one sector. On double–sided disks, one cluster equals two sectors. On hard disks, clusters can be 4, 8 or more sectors long. Regardless of the size of a cluster for any given disk, DOS always sets aside disk space by clusters, not sectors.

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F **File Alloc Table:** This cluster holds part of the File Allocation Table (FAT), which is used to keep track of where files are stored on the disk and which clusters are available.

D **Directory:** This cluster is part of the disk's directory.

[•] **Allocated:** This cluster is part of a file.

h **Hidden:** This cluster is part of a hidden file.

r **Read Only:** This cluster is part of a Read–Only file.

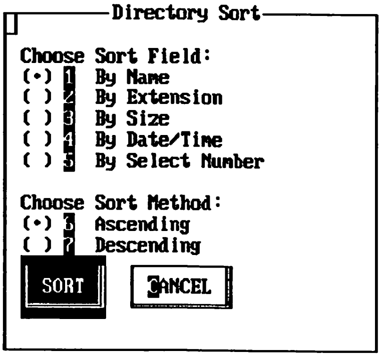
[x] **Bad Cluster:** This cluster has been marked as bad and is unusable.

Note: The codes in the manual may be different from screen codes, as IBM graphics characters are used to make the display more readable.

Directory Sort

The Directory Sort command allows you to sort the files in a selected subdirectory. You can also sort the root-level directories when you are at the root. You can sort by name, extension, size or date in either ascending or descending order.

1. Select the subdirectory you want to sort.
2. Choose **Directory Sort** from the Special menu. PC Shell displays the Directory Sort dialog box.



Directory Sort

Choose Sort Field:
● 1 By Name
○ 2 By Extension
○ 3 By Size
○ 4 By Date/Time
○ 5 By Select Number

Choose Sort Method:
● 6 Ascending
○ 7 Descending

3. Select one of the following sorting fields:

   By Name: sorts by file name.

   By Extension: sorts by file extension.

   By Size: sorts by total number of bytes in file.

   By Date/Time: sorts by file date and time.

   By Selected Number: sorts by the number associated with the selected files.

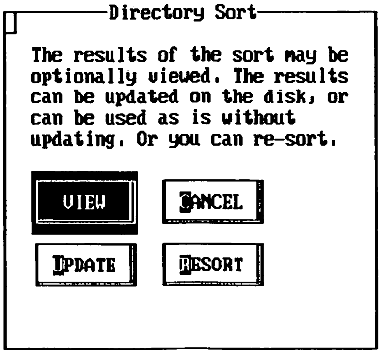
4. Also select one of the following sorting methods:

   Ascending: sorts in ascending order (A to Z or smallest to largest).

   Descending: sorts in descending order (Z to A or largest to smallest).

5. Select **Sort** to proceed. (**Cancel** returns you to the main PC Shell screen.)

   The Directory Sort dialog box is presented with four options.



Directory Sort

The results of the sort may be optionally viewed. The results can be updated on the disk, or can be used as is without updating. Or you can re-sort.

6. Select one of the following options:

   View: views the sorted files without saving them to the disk.

   Update: saves the sort sequence to disk.

   Resort: returns to the Directory Sort dialog box.

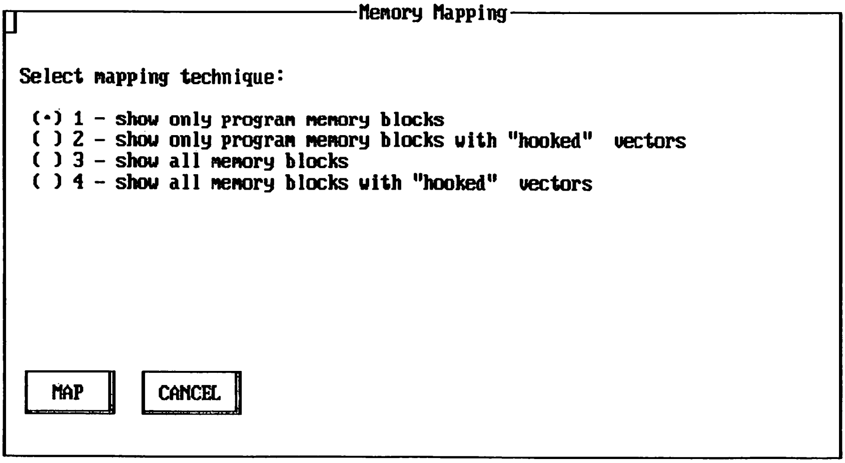
   Cancel: cancels the sort and returns to the main PC Shell screen.

Note: In order to see the updated sort order on your root directories, you must re-read the drive (press Ctrl-Drive letter or click on the drive letter on the Drive Line).

Memory Map

The Memory Map command lists the type, location and size of DOS memory blocks and names the applications owning them. This information is helpful in determining which memory resident programs are loaded into memory and how much memory they are using.

1. Select **Memory Map** from the Special menu.



```
Memory Mapping

Select mapping technique:

 (•) 1 - show only program memory blocks
 ( ) 2 - show only program memory blocks with "hooked"  vectors
 ( ) 3 - show all memory blocks
 ( ) 4 - show all memory blocks with "hooked"  vectors
```

2. Select one of the following four options:

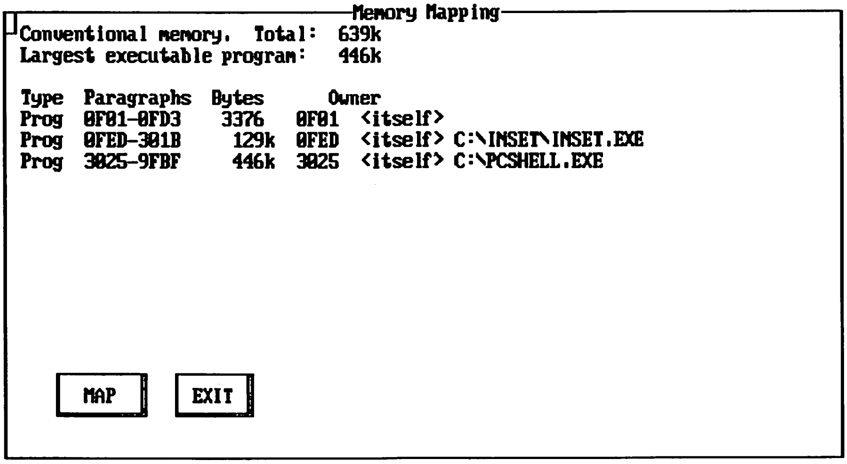
   Show only program memory blocks: maps just the blocks occupied by programs.

   Show only program memory blocks with "hooked" vectors: maps just the blocks occupied by programs and display any system vectors pointing to that block.

   Show all memory blocks: maps all memory blocks.

   Show all memory blocks with "hooked" vectors: maps all memory blocks and display any system vectors pointing to that block.

3. Select **Map** to show the memory mapping information.



```
Memory Mapping
Conventional memory.  Total:  639k
Largest executable program:   446k

Type  Paragraphs  Bytes      Owner
Prog  0F01-0FD3    3376  0F01  <itself>
Prog  0FED-301B    129k  0FED  <itself> C:\INSET\INSET.EXE
Prog  3025-9FBF    446k  3025  <itself> C:\PCSHELL.EXE
```

The following information is displayed:

- **Type:** The kinds of memory control blocks are the following:

  Prog: Application Program
  Sys: System program
  Env: Dos environment
  Free: Unallocated memory

- **Paragraphs:** The memory area used by the program.
- **Bytes:** The number of bytes in memory used by the program.
- **Owner:** The name of the program in memory.

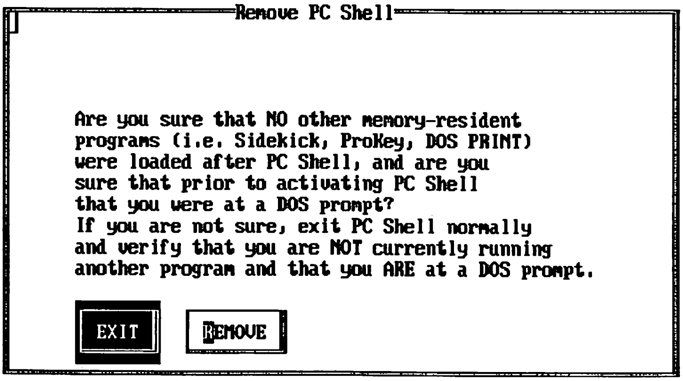
4. Select **Map** to return to the Memory Map dialog box or **Exit** to return to the main PC Shell screen.

Remove PC Shell

PC Shell may be removed from memory when running in TSR mode. The Remove PC Shell command is only available in the Special pull-down Menu when running in memory resident mode.

Note: PC Shell must be the last TSR loaded and have been hotkeyed into at the DOS prompt before it may be removed from memory.

1. Choose **Remove PC Shell** from the Special pull-down Menu.



```
Are you sure that NO other memory-resident
programs (i.e. Sidekick, ProKey, DOS PRINT)
were loaded after PC Shell, and are you
sure that prior to activating PC Shell
that you were at a DOS prompt?
If you are not sure, exit PC Shell normally
and verify that you are NOT currently running
another program and that you ARE at a DOS prompt.
```

PC Shell can also be removed from memory with the following command:

```
KILL
```

This command also removes PC Tools Desktop (plus BACKTALK) from memory if it was the last memory resident program you loaded.

Mirror/Rebuild

*** WARNING! ***

Rebuild is intended to be used ONLY when needed to recover from a disastrous mistake! Rebuild rebuilds your hard disk's FAT (File Allocation Table) and root directory from the file created by Mirror or if Mirror was not run, from the hard disk data itself. Only run this program immediately after an accidental ERASE *.*, RECOVER *.* or FORMAT.

Casual use of Rebuild is dangerous. It is very important to understand that Rebuild depends upon the files written by Mirror. Rebuild restores the entire FAT and the entire root directory to the state recorded in those Mirror files. Rebuild does not restore all of the files on your hard disk. Files deleted in subdirectories should be recovered using Undelete in PC Shell. If you have not recently used Mirror, then you will definitely lose new files created since the last time you used Mirror and you may also lose some other data as well. If you have not been running Mirror, then Rebuild can be even more dangerous, as it will create a new root directory and FAT based upon data it finds on the disk. Use Rebuild only to recover from disaster!

Introduction to Mirror and Rebuild

When you erase files or format a hard disk with most versions of DOS, the data in the files is not actually erased, only the records of the files' names (in the directory) and locations (in the FAT) are lost. If you have been using PC Backup, then you could use PC Restore to recover everything, but that requires more time. If that information were saved somewhere else, it could easily recover the apparently erased hard disk files. Fortunately, there is an easier way to recover from an accidentally formatted disk or deleted files.

The programs MIRROR.COM and REBUILD.COM provide protection against accidental ERASE, RECOVER, or FORMAT of your hard disk. Mirror will keep a backup copy of the File Allocation Table (FAT) and the root directory of your hard disk in a special hidden file. If someday the unthinkable happens, you then can use the Rebuild program to quickly rebuild the critical disk information from the special Mirror file. Rebuild will do its best to restore your hard disk to the same state as Mirror recorded, effectively undoing the ERASE or FORMAT.

Mirror will also optionally create a "Delete Tracking" file that will save the full file name and all clusters a file occupied before it was deleted. The Undelete option of PC Shell will be able to use this information to fully recover accidentally deleted files automatically, even if the disk was fragmented. (See the Undelete section of PC Shell for more information on the "Delete Tracking" file.)

In addition, you can run Mirror with the optional /PARTN parameter to create a copy of your hard disk partition table information so that you can recover from "Invalid drive specification" errors. Mirror /PARTN only needs to be run once, unless you change your hard disk partitions. See "Saving partition table information" later in this chapter.

AT&T, Burroughs, & Compaq Computers

The DOS FORMAT program for hard disks supplied with most versions of MS DOS does not actually erase your hard disk's data – only the Root Directory, File Allocation Table, and Boot Record. **Unfortunately, this is not true for the FORMAT command supplied with COMPAQ's MS–DOS up through version 3.2, AT&T's MS DOS up to version 3.1, and at least some versions of the MS DOS supplied by Burroughs.**

These versions of FORMAT.COM are destructive: They actually erase all the data on the hard disk so there is nothing left to recover.

Therefore, the Mirror and Rebuild programs will not be able to recover from an accidental format. Mirror will save the information, but the FORMAT.COM program will erase it before Rebuild gets a chance to recover it for you.

If you have any of these versions of MS DOS, we strongly recommend that you replace the FORMAT.COM program with the PCFORMAT.COM supplied with PC Tools Deluxe. If you use this format program, you will be able to recover after an accidental format of your hard or floppy disks. If you used our PC Setup program to install PC Tools Deluxe on your hard disk, this has already been done for you.

Recovery if You Haven't Been Using Mirror

Rebuild can recover disks that haven't been protected by Mirror. However, the level of protection isn't as great because Rebuild will have to reconstruct the root directory and file allocation table from scratch rather than just restoring it from previously saved data. However, if you accidentally formatted your disk with our PC Format program, and you had been running Compress regularly, Rebuild will be able to recover all or nearly all of your hard disk data. If you used a DOS format program, you will lose all the files in your root directory, and all the first-level subdirectories will be renamed (as the original names were lost).

Rebuild will do a much better job of recovering data from an accidental format than most other programs. Many of these programs will incorrectly build the file allocation table so your hard disk will have to be re-formatted after the recovery is done. Not only will Rebuild leave your hard disk in a usable state, it will also alert you to files that it couldn't recover properly. See the section below on Rebuild for more information.

Note: Rebuild cannot recover from accidentally formatted floppy disks unless they were formatted with our PC Format program included with your PC Tools Deluxe package. See later in this chapter for more information.

Running Mirror

MIRROR.COM backs up the root directory, File Allocation Table (FAT) and boot record each time it is run, and will optionally install a resident program that will save all deleted file information in a special Delete Tracking file. It should be run at least once a day and can be included in your AUTOEXEC file. This will run the program every time you turn on your computer.

Note: Mirror is not a memory resident program, but the Delete Tracking program is. The Delete Tracking parameter is automatically added when you use PC Setup to install Mirror. If you are having conflicts with other memory resident programs, we highly recommend that you NOT remove Mirror as you will leave yourself unprotected and unable to recover data. You can, however, remove the Delete Tracking option (the /T parameter) by editing your AUTOEXEC.BAT file.

To run Mirror manually, type:

```
MIRROR [d: d: ...] [/1] [/J] [/Td-nnn /Td-nnn ...]
```

Actually, all Parameters shown are optional (that's what the brackets mean – they aren't part of the command and shouldn't be typed).

d: the drives you wish Mirror to save the directory and FAT for

/1 tells Mirror to keep only the latest directory and FAT information

The last parameters are the Delete Tracking options, which will be described later.

Normally (when the /1 parameter is not specified), Mirror will keep two copies of your directory and FAT. Each time it is run, it will rename the old data and save the new. This approach allows you to recover data in the rare case the Mirror gets inadvertently run after a FORMAT or some other disk disaster. (This can be caused by a program that goes berserk and destroys some of the root directory and/or FAT. In this case, your computer might "mostly" work, and a subsequent run of Mirror would fill the Mirror save file with the bad information. By having two copies, you have one extra layer of insurance as you can recover data saved before the offending program was run.)

The /Td–nnn parameter is the Delete Tracking option. Mirror builds a file that contains information on all deleted files. This makes the Undelete option of PC Tools Deluxe more reliable as it won't lose the first character of the file name and can fully recover fragmented files. The Delete Tracking option is a small resident program that is left in memory by Mirror. It intercepts all DOS DELETE commands and saves the file information in the special delete tracking file before the DOS DELETE command is allowed to finish.

The T following the / means enable Delete Tracking. The d is the drive letter to track. Multiple drives can be specified, each with its own /Td parameter. The "–nnn" is optional and specifies how many deleted file entries to allow. If you don't specify the "–nnn", Mirror creates a file that will hold a number of entries based upon the type of disk being tracked. The maximum number of entries is 999. Here is a table that details for each drive type, the size of the delete tracking file and the number of deleted files each can hold:

DISK SIZE	FILE SIZE	NUMBER OF ENTRIES
360 K	5K	25
720 K	9K	50
1.2 MEG	14K	75
1.44 MEG	14K	75
20 MEG	18K	101
32 MEG	36K	202
OVER 32 MEG	55K	303

The Delete Tracking file is always stored in the root directory. (On partitioned hard disks, the Delete Tracking file is stored in the root directory of the first partition.) If the file already exists, the Delete Tracking option will add to it – existing entries will be saved. When the file is full, entries will be overwritten beginning with the oldest entries first. Therefore, with a 32 megabyte hard disk, you would always be able to recover the last 200 deleted files (assuming they hadn't been overwritten by new files).

WARNING: Don't attempt to use Delete Tracking on any drive that has been used with JOIN or SUBST. If assign is to be used, it must be done (made resident) before Mirror is run to install delete tracking.

NOTE: If for any reason Delete Tracking is not able to properly save the deleted file directory information in its special file, it will beep the speaker twice. This lets you know immediately if an error has occurred.

Using Compress with the Delete Tracking Option

Since Compress works by changing file positions on your hard disk, it will invariably overwrite any deleted files. Therefore, it is very important that you Undelete any accidentally erased files BEFORE running Compress. Compress will clear out the Delete Tracking file when it is done, and any existing entries will no longer be recoverable.

The best way to protect your data is to make sure Mirror is run as often as possible. One way to make sure it is run at least once a day is to put it into your AUTOEXEC file. If you used our PC Setup program to install PC Tools Deluxe, you probably already have an AUTOEXEC file with Mirror in it. If not, and if you don't already have an AUTOEXEC file, here's a simple way to make one:

1. Type **C:** and press Return.
2. Type **CD ** and press Return.
3. Type **COPY CON: AUTOEXEC.BAT** and press Return.
4. Type **MIRROR C: /TC** and press Return.
5. Press the **F6** function key and press Return.

Be sure you check first to make sure you don't already have an AUTOEXEC file. If you do, this will overwrite it (not add to it). If you want to add Mirror to your existing AUTOEXEC file, use PC Setup or Notepads in PC Tools Desktop to add the Mirror line.

Since the more often you run Mirror the safer your data will be, we suggest you also create batch files for your most important programs. For example, if you use Lotus 1-2-3, you can create a batch file that when leaving 1-2-3 will run Mirror. Here's how (assuming your 1-2-3 files are in a subdirectory called "123"):

1. Type **C:** and press Return.
2. Type **CD \123** and press Return.
3. Type **COPY CON: L123.BAT** and press Return.
4. Type **LOTUS** and press Return.
5. Type **MIRROR** and press Return.
6. Press the **F6** function key and press Return.

Now to start 1-2-3, type L123 instead of Lotus or 123. Mirror will be run every time you exit LOTUS 1-2-3. We suggest you create batch files like this for all your frequently run programs.

Running Rebuild

Normally, you will never run Rebuild. In fact, you should only run it if you have accidentally formatted your hard disk, or erased too many files to recover practically using PC Tools Deluxe's Undelete option. Remember, running Rebuild will restore your computer's Directory and FAT to the same state they were in when you last ran Mirror, so if data has been changed since then, running it can be dangerous as this data cannot be recovered.

If you have not recently (or ever) run Mirror, then Rebuild will recreate a new root directory and file allocation table based upon the data it finds on the disk. If you accidentally formatted your disk with a DOS format command, all root–level files will be lost and all first–level subdirectories will be renamed (because the names were erased by the DOS FORMAT command). If you accidentally formatted your disk with the PC Format program then your root–level files and subdirectory names will be recovered by Rebuild.

Note: Before attempting to Rebuild a hard disk or other device that needs a device driver to run, you need to boot your system from another device (such as a floppy drive) that has the appropriate device driver on it and a proper CONFIG.SYS file. Otherwise, Rebuild won't be able to properly recover data from this device.

Running Rebuild with a Mirror File

Type **REBUILD C:** and press Return.

Where the "C:" is the hard drive you have accidentally formatted. After displaying a warning about the effects of running Rebuild when you don't need it, Rebuild will display the time and date that Mirror was last run, and ask you if you want to update the system area of your drive with this information. If you answer Y, then rebuild will proceed.

If you answer N, Rebuild will look to see if an older Mirror save file exists. If so, it will display the time and date for this save file and ask you if you want to update using this data. If you do, answer Y. If you answer N, or Rebuild could not find an older save file, it will then ask if you want to attempt to recover by scanning for subdirectories and rebuilding the directory and file allocation table based upon data found on the hard disk (see the next section "Running Rebuild without a Mirror file").

The only time you will ever want to use the older Mirror file is if you have accidentally run Mirror again after formatting your hard disk or your hard disk data was damaged before the last time you ran Mirror.

Rebuild will search the hard disk for the save files created by Mirror. It searches the disk directly, so the disk does not need to be "readable" by DOS for Rebuild to work. (Don't run FDISK before running Rebuild as FDISK can destroy information not saved by Mirror!)

Restoration of your hard disk data is automatic. When Rebuild is done, we recommend that you reboot your system then run the DOS CHKDSK program with the /F parameter. Any errors displayed by CHKDSK were caused by data that was written to the hard disk between the time Mirror was last run and when Rebuild was run. CHKDSK won't recover this data for you, but it will clean up the errors. To run CHKDSK, change to your subdirectory that contains DOS and type:

```
CHKDSK /F
```

Running Rebuild without a Mirror File

Note: If data does not recover properly after a hard disk "crash," it may be due to Rebuild expecting a formatted hard disk. Use PC Format to format the hard disk then run Rebuild again.

If Rebuild could not find a Mirror file to recover from, or you instructed Mirror not to use it, Mirror will attempt to re-create your disk root directory and FAT based upon what it finds on the disk. This process is much slower and less reliable than using a Mirror file, but if you haven't run Mirror, it is your only hope to recover lost data.

To Recover a Disk with Rebuild when You Haven't Previously Run Mirror:

Type **REBUILD C: [/P] [/L] [?] [/TEST]**

The first parameter is the drive letter to recover (it this case, drive C:).

The other parameters are optional and perform the following functions:

/P

Causes all output to be directed to your printer so you have a hard copy of the entire Rebuild process. This is highly recommended.

/L

This tells Rebuild to list to the screen (and to the printer if the /P option is used) every file and subdirectory it finds. Normally, Rebuild will only list subdirectories and files that are fragmented and require input from you. Pressing Ctrl - S will pause the list.

/?

Displays a help screen

/TEST

This parameter lets you see how Rebuild will recreate the information without actually performing the rebuild and writing to the disk.

As Rebuild runs, it will tell you how many subdirectories it found, and if the /L option is selected, will show you all files in each subdirectory. Recovery is almost completely automatic, especially if you have recently run Compress.

The only time Rebuild needs input from you is when it encounters a file that appears to be fragmented. Rebuild has no way to know where the other pieces of the file are stored on the hard disk, so it will give you the option of

- Truncating the file
- Deleting the file

If you select to Truncate the file, you will in most cases recover part of your data. If the file is an important data file, and you want to try to recover the data manually, we suggest you select deleting the file, then use PC Shell's Undelete option to attempt to recover the rest of the data (by searching for it on the disk – see PC Shell Undelete option for more information).

If Rebuild doesn't query you for a specific file, it is *probably* intact. The reason we say probably is that it is possible that the file was originally fragmented (for example, in two pieces) with another file that was later deleted in between. In this case, Rebuild will have no way of knowing that the deleted fragment in the middle was not part of the recovered file. In other words, while Rebuild will do the best job possible recovering your data, if you haven't been using Mirror, the only way to know if your files are intact is to run them (programs) and look at them (data files).

When Rebuild is complete, your hard disk will be in a useable condition. By this we mean that CHKDSK should not show any errors. None of your files will be cross–linked, and except for files that did not recover properly, your hard disk should be completely useable. Again, if you formatted your hard disk with DOS version 3.x or higher FORMAT.COM, all files in the root directory will be lost. If certain programs do not run, it is probably due to fragmentation that Rebuild could not discover. In this case, your only recourse is to restore them from your original floppy disks or backups. If data files are not complete or correct, you will have to determine whether it is easier to restore from a backup that may be old, or add lost information again.

In any event, if you find yourself in this situation, we strongly recommend that you start using Mirror and Compress often so that you won't ever have to do this again.

Saving Partition Table Information

Every formatted hard disk has at least one partition, and many people choose to use multiple partitions for varied reasons such as using different operating systems, or just to break up a large disk into smaller "chunks." The information about how your hard drive is partitioned is stored as a special table on the hard disk. If this partition table information is somehow lost or corrupted, DOS cannot "recognize" your hard disk and will give you the ominous "Invalid drive specification" error whenever you try to access it. The /PARTN option of Mirror helps prevent this from happening to you by backing up the partition table information on a separate floppy disk.

Mirror without the /PARTN parameter saves the directories, the file allocation table and the boot record, which is usually enough to get your data back unless your partition table has been lost. (If you used PC Setup to install PC Tools Deluxe on your hard disk, Mirror has already been put into your AUTOEXEC.BAT file where it will be run each time you turn on your computer.) By running Mirror/PARTN the first time you use Mirror, you will save this vital partition information on a floppy disk. Put this disk away in a safe place. The only times you will need to run Mirror/PARTN again is if you add new partitions or re-partition your hard drive. If your partition table is lost, you can later run Rebuild/PARTN to recover it.

Important: Mirror/PARTN saves standard DOS partitions; it does not recognize non-standard partitioning schemes (such as those created by Disk Manager by On-Track, SpeedStor by Storage Dimensions, or V feature and V feature Deluxe by Golden Bow Systems) and thus will not save them.

Mirror/PARTN

Running Mirror using the /PARTN parameter saves partition table information to a file named PARTNSAV.FIL. Any time you add or change any formatting information on your hard disk (using FDISK.COM), or change logical drives (for example, if you go in and remove E) you need to rerun Mirror /PARTN to save the new partition table information.

To run Mirror to save the partition table information, perform the following task:

1. Type MIRROR/PARTN at the DOS command line and press Return.
   Mirror prompts you for the drive you want to save the partition table information to. (A: is the default.)
2. Put a formatted floppy in the chosen drive and press Return.
   The information is written to disk and saved in the PARTNSAV.FIL. When done, put the floppy disk away in a safe place.

If you want to run Mirror using any of the other parameters, you need to run Mirror again. Mirror /PARTN will only save partition table information.

Rebuild/PARTN

If you ever receive the message "Invalid drive specification," it usually means that the problem is caused by a corrupted partition table. Running Rebuild/PARTN enables you to restore the partition table information so you can run Rebuild again to restore your computer's directory and FAT.

Rebuild checks the drive parameters that were saved in the PARTNSAV.FIL file against the actual drive parameters. They must match exactly or Rebuild will refuse to restore the information.

To start Rebuild/PARTN perform the following task:

1. Type Rebuild/PARTN at the DOS command line and press Return.
   Rebuild prompts you for a diskette and a drive. (A: is the default.)
2. Insert the disk with the PARTNSAV.FIL file on it in the chosen drive, enter the the drive name, and press Return
   Rebuild/PARTN is executed, and you will be prompted from the screen for any further information.

Note: When Rebuild/PARTN is done executing, you will be prompted to put a Master DOS disk in Drive A: and press Enter to reboot. This is necessary to inform DOS that the partition table information has been changed. You should then run Rebuild without the /PARTN option to recover your directories and file allocation table. After this step, your hard disk should be intact.

You can also add the following parameter when you run Rebuild to see the current drive's partition table information.

REBUILD/PARTN/L

Displays the current drive's partition table. The size of the partition table is represented in megabytes and is based upon standard sized sectors (512). If the sectors on your hard drive are any other size, then the displayed size in bytes may be incorrect. The total has been determined by taking the number of sectors and multiplying by 512.

The following parameter can be optionally added:

/P

Prints a copy of the partition table display to LPT1.

PC-Cache

PC-Cache is a program designed to speed up hard and floppy disk access by storing the most frequently used information in your computer's memory. Unlike a RAM disk, which is dangerous as a power–outage can mean the loss of data, PC-Cache will always keep your disk up–to–date. It speeds up programs by reducing the number of times the computer has to wait for the disk when reading commonly used information. Writing always occurs as it does without PC-Cache so no information can be lost.

IMPORTANT: PC-Cache must be installed after Mirror but before any other memory-resident programs (PC Shell, Desktop, BACKTALK.EXE, etc) to prevent loss of data. If you used PC Setup to install your PC Tools Utilities programs, they are installed in the correct order. If you modify your AUTOEXEC.BAT file, make sure you install PC Tools programs in the correct order. See the Memory Resident Programs Appendix for more information about loading memory-resident programs.

PC-Cache supports standard memory (up to 640K), Expanded memory (Lotus/Intel/Microsoft EMS), and Extended memory (AT style memory greater than 640K). When a cache is created in standard, expanded or extended memory, a table is created which will use a small amount of standard memory. The amount of standard memory used is determined by the size of the cache.

PC-Cache also supports up to 4 hard drives and 4 floppy disk drives.

PC-Cache's help screen can be displayed by typing PC-CACHE/? This will display all of the parameters recognized by PC-Cache.

To install PC-Cache, type the following (or insert it in your AUTOEXEC.BAT file). If you used PC Setup to install PC Tools Deluxe on your hard disk, this has already been done for you:

```
PC-CACHE    [/Id /Id ...] [/SIZE=nnnK] or
            [/SIZEXP=nnnK] or [/SIZEXT=nnnK]
```

PC-Cache Optional Parameters

/Id

Specifies a drive to ignore caching, where "d" is the drive letter. PC-Cache will normally cache all drives it can find. On partitioned hard disks, you must cache all partitions or none. Ignoring one partition will ignore all the partitions on one physical drive.

/SIZE=nnnK

The amount of standard memory (in 1k increments) to allocate to PC-Cache. If no size is given, PC-Cache will default to 64k. The maximum size is 512k.

/SIZEXP=nnnK

The amount of expanded memory to allocate to PC-Cache.

/SIZEXT=nnnK

The amount of extended memory to allocate to PC-Cache. Only available on 286 and 386 processors.

Note: Only one size option is allowed: You cannot mix standard, expanded, and extended memory. The minimum size that can be specified is 64k.

/EXTSTART=nnnnK

Specifies the start location of the cache buffer in extended memory. EXTSTART must be greater than 1 meg (1024K). This option is seldom necessary and tells PC-Cache what address in extended memory to load above. (It's like a high water mark; it tells PC-Cache not to load below this address.) This option may be required when using other programs that install in extended memory. PC-Cache is compatible with VDISK.

/FLUSH

Flushes the cache; it sets the cache to empty.

/MAX=nnnnK

Limits the number of sectors that can be saved in the cache from a single read request. When a large program or data file is initially read into memory, it may consume all cache buffers. Selecting a low number (for example, 8-16) optimizes caching for large applications.

/MEASURES

Displays the following measurements of PC-Cache's performance:

Logical transfers: The number of data transfers that have occurred between the cache and the current application.

Physical transfers: The number of data transfers that have occurred between the disk and the current application.

Transfers saved: The number of physical transfers saved by PC-Cache. (This is the difference between the logical and the physical transfers.)

Percentage saved: The percentage of transfers saved by PC-Cache.

/NOBATCH

Used only when caching in extended memory. PC-Cache normally transfers 4 sectors of data at a time. The /NOBATCH parameter reduces that number to 1. When used in extended memory, PC-Cache uses the ROM BIOS to transfer the sectors, disabling all interrupts. The /NOBATCH parameter reduces the amount of time the interrupts are disabled between transferring sectors. This is recommended when running communications software.

/PARAM

Displays the parameters currently in effect.

/PARAM*

Displays information such as whether or not you have EMS memory, what drives you have available and their sizes, how extended memory is allocated, etc.

/UNLOAD

Unloads the cache.

/?

Displays the Help screen listing all of the PC-Cache parameters.

/X

If you are using NEC or WYSE 3.3 DOS to partition your hard disk larger than 40 megabytes as a single partition, use the /x parameter.

If PC Setup was used to install PC-Cache, any of the parameters above can be added or excluded by editing your AUTOEXEC.BAT file with PC Tools Desktop Notepads.

Examples

The following are examples to show you how these parameters work.

```
PC-CACHE /IA /IB /SIZE=64K
```

This creates a cache of 64K that ignores the floppy drives A and B in standard memory.

```
PC-CACHE /SIZEXP=128K
```

This creates a cache of 128K in expanded memory.

```
PC-CACHE /SIZEXT=128K
```

This creates a cache of 128K in extended memory.

Note: PC-Cache is completely compatible with the PC Tools Deluxe Compress program. It is safe to have PC-Cache resident while running Compress. *(This is not true with most other caching programs.)*

If PC-Cache Doesn't Seem to be Minimizing Disk Access

PC-Cache will store information about the FAT and directories as well as the programs being run. Therefore, even when a program is loaded that is smaller than the cache, some disk access may still be necessary.

Bernoulli Boxes and PC-Cache

IOMEGA Bernoulli drives are supported by placing a special driver in the CONFIG.SYS file of the disk you use to start up the computer. This driver allows PC-Cache to monitor transfers to and from Bernoulli drives.

To Install the Bernoulli Driver:

1. Copy the PC-CACHE.SYS file from the disk to the root directory of the disk you use to start up the computer.
2. Identify the line in your CONFIG.SYS file that specifies the Bernoulli driver (IDRIVE.SYS, RCD.SYS, or equivalent) and place the following line directly after it:

```
DEVICE=PC–CACHE.SYS
```

3. Restart your system.
   You should notice a sign-on message from PC-CACHE.SYS during the startup process.
4. Load PC-Cache as you normally would.

Note: We recommend that you add the special PC-Cache driver even if you do not wish to cache your Bernoulli drives. In this case, use the /I parameter to ignore the caching of your Bernoulli drives.

When PC-Cache is loaded it will check for the PC-CACHE.SYS driver. If PC-Cache has trouble finding this driver, it will issue one of the following two messages:

```
WARNING:  PC-CACHE.SYS placed after non-disk driver
```

or

```
/-x drive X cannot be cached--physical unit unknown
```

If you receive the first message, check to see that you have placed PC-CACHE.SYS after the Bernoulli driver and your Bernoulli box is turn on. If you receive the second message, where x is the drive letter for one of your Bernoulli drives, check to see that you have placed the PC-CACHE.SYS file in the root directory of the disk you use to start up the computer and that you have correctly spelled the driver name in your CONFIG.SYS file.

Compress

Compress is a stand-alone application supplied with PC Tools Utilities that will optimize your hard disk's performance. Compress doesn't compress the data in a file by shrinking strings of like characters (like PC Secure), but instead arranges the files on a hard disk or diskette such that each file is contained in one contiguous area (this is usually called unfragmenting your files.)

Fragmentation is the condition where the different parts of a file are not stored together on the disk. This can occur due to the way DOS allocates space for a new file or an old, growing file. If there has been much file creation and deletion activity, then it is likely that some of the files are fragmented. There are two reasons this is undesirable. First, if portions of a file are stored in widely separated areas of the disk, then accesses to that file will be slowed. Therefore, disk intensive programs will perform better if the disk is compressed. Second, the **Undelete** function of PC Shell will sometimes be unable to recover files perfectly if the deleted files were fragmented and the delete tracking option of Mirror was not installed.

With Compress, you can do any of the following:

- Check your hard disk for file fragmentation
- Unfragment your files to improve disk access and aid in file recovery
- Move your subdirectories to the front of the hard disk so they can be accessed faster
- Sort all your directories simultaneously
- Check your hard disk for unmarked errors and move files out of the way of these errors

Starting Compress

Like all PC Tools Utilities applications, Compress has full mouse, keyboard, and color support and is very easy to learn and use.

For a detailed procedure on using the pull-down menus in Compress and the other PC Tools Utilities applications, please read the Getting Started chapter. The Compress chapter assumes you are already familiar with the concepts discussed in Getting Started.

You can start Compress two ways: by starting Compress from the DOS command line as a batch file or by choosing options from the pull-down menus.

Starting Compress from the DOS Command Line

You can start and run Compress without any additional input by specifying the drive to compress and adding the following parameters at the DOS command line:

```
COMPRESS [C:] [/CU] [/CF] [/CC]
```

C: is the name of the disk to be compressed. If not specified, Compress will assume the current drive.

The /CU, /CF, and /CC parameters allow you to run the various compress options (explained later in this chapter) from a batch file without additional input. The /CU parameter will unfragment your hard disk using the "Unfragment and minimum compression" option. The /CF parameter will do a full compress and /CC will do a full compress and clear all unused sectors.

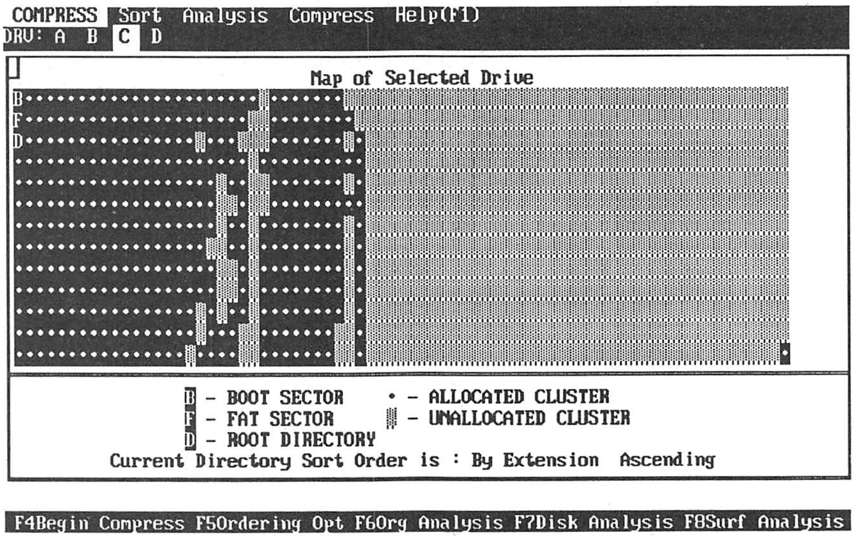
Note: Other parameters that can be added to the command line to specify ordering options are discussed in the section called "Additional parameters."

Starting Compress Using the Pull-Down Menus

- Type the following at the DOS prompt and select options from the Compress pull-down menus:

```
COMPRESS
```

This starts the Compress program. You will see a screen that looks like this: (except it will show the map for <u>your</u> drive)



Current Directory Sort Order is : By Extension Ascending

From top to bottom, the screen contains the following parts:

- **Horizontal Menu Bar:** contains the names of pull-down menus.
- **Drive List:** is the line directly beneath the menu bar. It lists all the available drives on your system. The current drive is highlighted.
- **Disk Map:** contains a logical representation of all the files on your disk. Different colors and patterned blocks are used to represent the various types of files on your disk, free space, and bad blocks. The more "fragmented" the display looks, the more fragmented your files and free space are. As the Compress program runs, you will see this display dynamically change as your files are reordered.
- **Message bar:** is located at the bottom of the screen. It is used to provide additional information, keystroke options, and help suggestions. This line will change constantly to reflect where you are in the Compress program. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted key(s) or positioning the mouse cursor on any portion of the command or highlighted key and clicking the mouse. For example, to begin Compress just press F4 or click anyplace on "F4 Begin Compress" with the mouse; this will begin disk compression. The commands disappear when the bottom line contains help messages.

Note: In order for an entire hard disk to be mapped on your screen, the dimensions have been scaled down so that you see a proportional representation (depending on the size and number of sectors on the disk) of your disk. The surface analysis map, on the other hand, represents your hard disk so that 1 square equals 1 cluster. What this means is that when you see the initial disk map, you won't notice if any clusters are bad if there are fewer bad clusters than the number that comprises 1 square. In order to see where any bad clusters are, you need to choose the Surface Analysis command from the Analysis menu.

Additional Parameters

The following parameters can be appended to either method of starting Compress:

> /NM will suppress the running of Mirror after Compress has been completed. We highly recommend that Mirror always be run after Compress. We suggest that you use the /NM option ONLY if you will be running Mirror yourself immediately following the Compress.
>
> **/BW** is also optional and will suppress colors on the screen while Compress is running. If you have difficulty reading the color display on your monitor, /BW can improve its appearance. /BW is ignored in monochrome systems.

Other options you can append to the program name that will sort files and determine the physical order of the files on your hard disk are discussed below. If these options are added to the command line after /CF, /CU, or /CC (see the previous section, "Starting Compress from the DOS command line," for a complete explanation of these parameters), Compress will immediately start compressing your hard disk, or you can accomplish the same thing from within Compress by selecting the appropriate menu items. If the following options are included without including /CF, /CU, or /CC, compression will not begin.

Ordering Options

You can specify the **physical** file ordering from the command line when you start Compress or run it from a batch file. The following options are available:

/OS	- Standard ordering
/OD	- DOS ordering
/OP	- Programs (.EXE and .COM) files first

Sort Options

You can also specify a desired **directory sort** option when starting Compress or running it from a batch file. The following options are available:

/SF - sort by file name
/ST - sort by file time
/SE - sort by file extension
/SS - sort by file size

In addition, you can specify one of the following command-line parameters to specify the sort order:

/SA - Ascending sort
/SD - Descending sort

Examples:

```
COMPRESS C:/OD/SE/SA
```

This example translates to the following: place the files on the hard disk in DOS order and sort the files by extension and do so in an ascending sort. This example sets these options and displays the Compress main screen for you to start Compress.

```
COMPRESS C:/CF/OD/SE/SA
```

This example immediately starts compressing your hard disk with full compression then places the files on the hard disk in DOS order and sorts the files by extension in an ascending sort.

Using Compress

The Compress program has three main functions:

- it analyzes a disk, looking for file fragmentation
- it corrects fragmentation
- it finds and blocks out bad clusters on your hard disk

Before you can start any of the Compress options, you need to specify which drive to use.

- Select the drive from the drive list.
  Your choice will highlight to show it is selected.

Keyboard

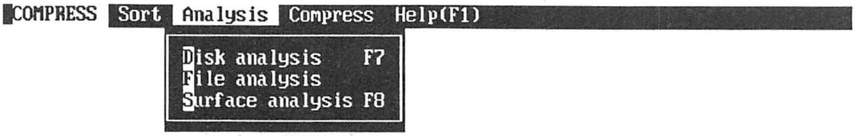
- Type Ctrl - drive letter.
  For example, press Ctrl-C to select drive C.

Mouse

- Click the mouse cursor on the drive letter you wish to compress.

The Analysis Menu

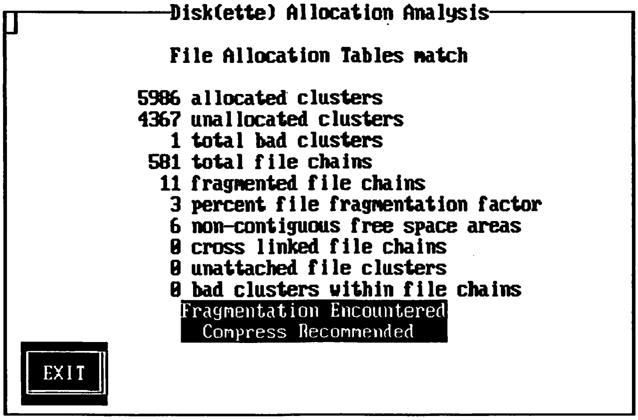
Using the commands on the Analysis pull-down menu can help you quickly determine if there are fragmented files on your disk or any undetected bad clusters. If undetected bad clusters are found, Compress marks them to prevent future use. If there is any data in the bad clusters, Compress attempts to move it to a safe place on the disk.



Disk Analysis

The Disk Analysis command allows you to display allocation information for the selected disk drive.

- Choose **Disk Analysis** from the pull-down menu, or press F7, or click on "F7Disk Analysis" on the Message Bar.
  The command will be executed immediately. After a few moments, you will see a screen similar to the following:



```
Disk(ette) Allocation Analysis

File Allocation Tables match

5986 allocated clusters
4367 unallocated clusters
   1 total bad clusters
 581 total file chains
  11 fragmented file chains
   3 percent file fragmentation factor
   6 non-contiguous free space areas
   0 cross linked file chains
   0 unattached file clusters
   0 bad clusters within file chains
Fragmentation Encountered
 Compress Recommended
```

This screen displays the technical information shown below:

- allocated clusters (disk space in use)
- unallocated clusters (free disk space)
- bad clusters (already marked as bad)
- fragmented file chains (fragmented files)
- file chains (files and subdirectories)
- the percentage of file fragmentation
- non-contiguous free space areas
- cross-linked chain files
- unattached file clusters
- bad clusters within file chains

The following examples show how this information can be useful.

The number of **Fragmented File Chains** indicates how many files and subdirectories are fragmented. The next line in the display shows this as a percentage of all the files on the disk. The longer it has been since you have run Compress, the higher this number is likely to be. If it is zero, there are no fragmented files.

The number of **Non-contiguous Free Space Areas** indicates how many pieces the unallocated space is divided into. It is desirable that this be kept small because the next time a file is created (or an existing file grows) DOS will allocate these pieces to the file. If there are many small pieces, instead of one large piece, the new or enlarged file will likely be highly fragmented. This will make access to it slower.

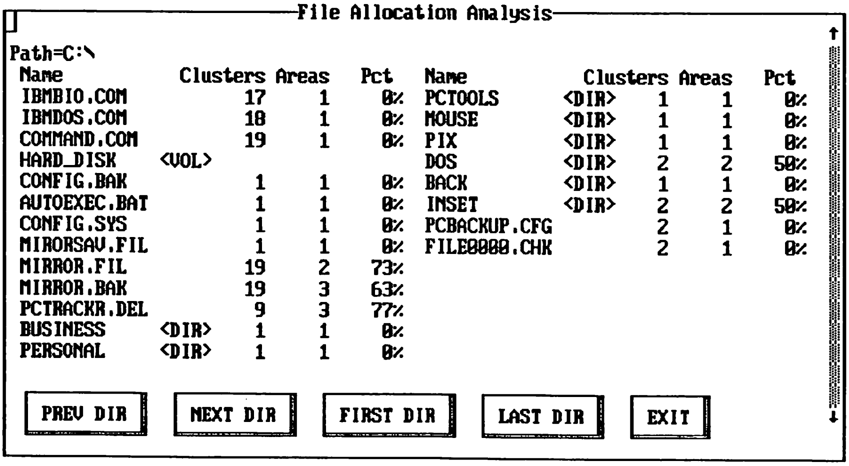
Important: If the last three items displayed on the screen have numbers in front of them, this indicates problems with your directories that only CHKDSK can correct.

You will need to run the DOS CHKDSK command (with the /F option) to correct these problems before you can compress your hard drive.

File Analysis

The File Analysis command displays information on the possible fragmentation of individual files. If Disk Analysis shows fragmented files, then File Analysis indicates which ones they are.

- Choose **File Analysis** from the Analysis menu.
  The command executes immediately and the following screen appears:



```
                         File Allocation Analysis
Path=C:\
 Name           Clusters Areas  Pct  Name          Clusters Areas  Pct
 IBMBIO.COM           17     1   0%  PCTOOLS       <DIR>   1     1   0%
 IBMDOS.COM           18     1   0%  MOUSE         <DIR>   1     1   0%
 COMMAND.COM          19     1   0%  PIX           <DIR>   1     1   0%
 HARD_DISK    <VOL>                  DOS           <DIR>   2     2  50%
 CONFIG.BAK            1     1   0%  BACK          <DIR>   1     1   0%
 AUTOEXEC.BAT          1     1   0%  INSET         <DIR>   2     2  50%
 CONFIG.SYS            1     1   0%  PCBACKUP.CFG          2     1   0%
 MIRORSAV.FIL          1     1   0%  FILE0000.CHK          2     1   0%
 MIRROR.FIL           19     2  73%
 MIRROR.BAK           19     3  63%
 PCTRACKR.DEL          9     3  77%
 BUSINESS     <DIR>    1     1   0%
 PERSONAL     <DIR>    1     1   0%
```

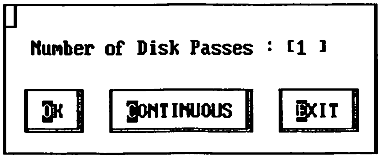
Each file is displayed along with the total number of clusters it occupies. The screen also shows the number of pieces the file is broken into (an unfragmented file has a "1") and the percentage of fragmentation for that file. Ordinarily, you won't need to run this option. If the Disk Analysis command shows there are fragmented files, you can proceed directly to compressing the disk.

Surface Analysis

The Surface Analysis command is a complete check of all clusters on your hard disk. It is very useful to catch and mark marginal clusters as bad so that DOS will not attempt to store your data in areas that may turn up bad later. Normally, DOS will make several attempts before it even alerts you that a sector is bad (via the familiar "Abort, Retry, Ignore" message.) The Surface analysis command will read each sector several times. If an error is found, it will mark the cluster that contains that sector as bad. If this cluster is already allocated to a file, it will attempt to move the file's data to a safe place first.

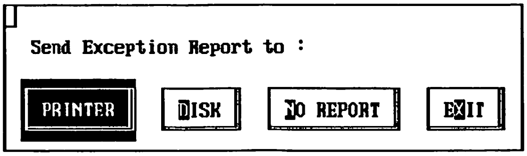
It is a good idea to use the Surface Analysis command periodically as it can find bad sectors before DOS does and before you lose any data. Due to the complexity of the analysis it does, it can take several hours to run. This is a great option to start overnight and let run until you come back to your computer in the morning.

- Choose **Surface Analysis** from the Analysis menu, or press F8, or click on "F8Surf Analysis" on the Message Bar.
  You will be given the option to run a set number of passes or to have the surface scan run until the Esc key is pressed.



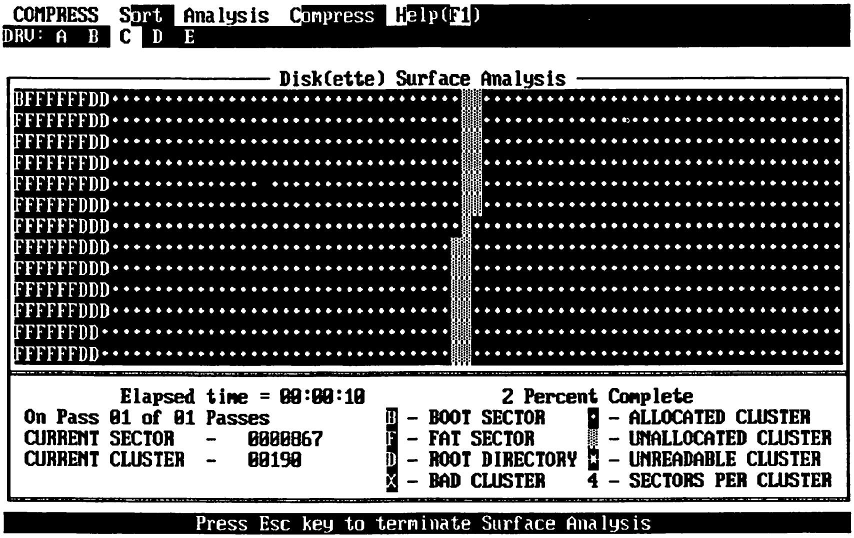
Number of Disk Passes : [1]

Compress can generate a report which can be optionally sent to a printer or to a disk file on a drive other than the one being scanned.



Send Exception Report to :

After scanning your disk, a screen similar to this appears:



COMPRESS Sort Analysis Compress Help(F1)
DRV: A B C D E
Disk(ette) Surface Analysis

Elapsed time = 00:00:10

2 Percent Complete

On Pass 01 of 01 Passes

CURRENT SECTOR - 0000867

CURRENT CLUSTER - 00190

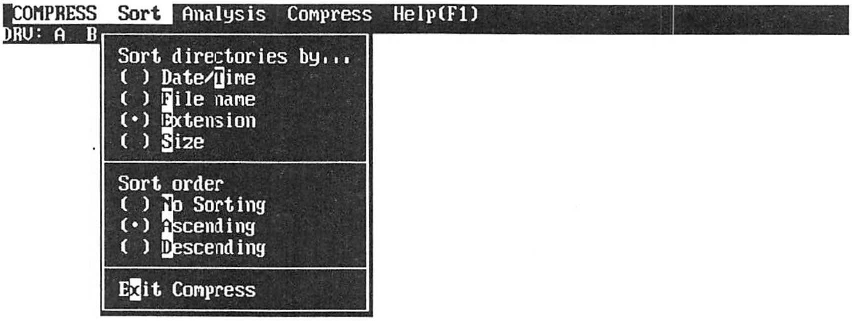
B - BOOT SECTOR
F - FAT SECTOR
D - ROOT DIRECTORY
X - BAD CLUSTER
• - ALLOCATED CLUSTER
░ - UNALLOCATED CLUSTER
☐ - UNREADABLE CLUSTER
4 - SECTORS PER CLUSTER

Press Esc key to terminate Surface Analysis

The Sort Menu

The PC Shell program has a command that will sort any disk directory. However, you may find that you would like all your directories sorted and this can be tedious using PC Shell. With Compress, you have the option of sorting all directories while compressing files. This option does not perform the actual sorting – it defines the type of sort that will be performed during the compression.

From the Sort menu, you have a variety of sorting options, shown below:

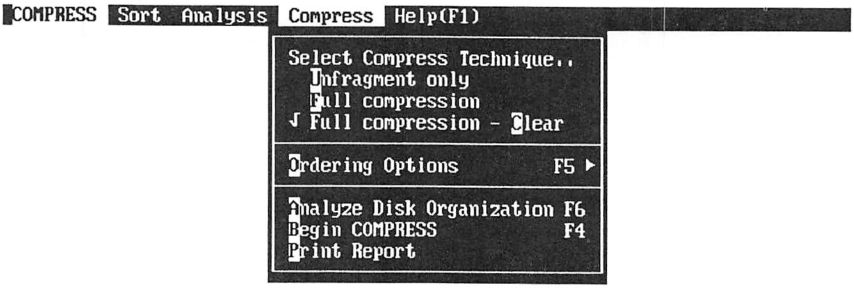


Note: If you select any option other than file name, the directories will be sub-sorted by name. For example, if you select to sort by file extension, then all files with a common extension will be sorted by name, within that extension.

You can also select whether you want the files sorted in ascending or descending order.

The Compress Menu

The Compress menu provides the necessary commands for compressing your disk:


COMPRESS Sort Analysis Compress Help(F1)
Select Compress Technique..
Unfragment only
Full compression
√ Full compression - Clear
Ordering Options F5 ►
Analyze Disk Organization F6
Begin COMPRESS F4
Print Report

The following section describes how to compress your disk using the commands on the Compress menu. Below is a brief overview:

1. Select one of the compressions techniques.
   A checkmark will appear to the left of the command to show it has been selected.
2. Select one of the file ordering options.
3. Choose the Analyze Disk Organization command.
4. Choose the Print Report command if you want a report summarizing the compress after it is finished.
5. Start Compress.

The following sections explain each of these commands in order. We recommend you read each option before making your selections.

Select Compress Technique

- Select one of the following three compression options:

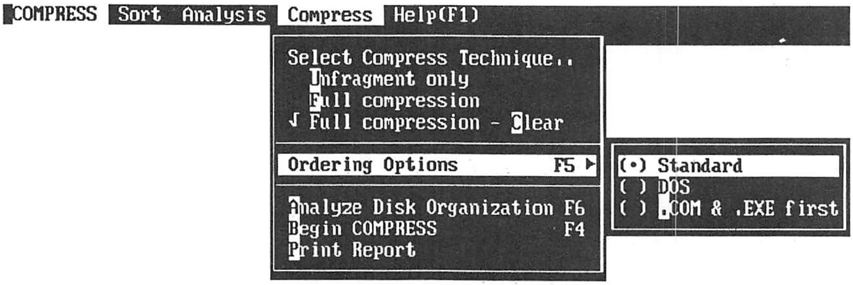
  Unfragment only: This option does exactly what it says. It will only unfragment your files. What is does not do is to move all the free space to the back of your disk. This means that while all your current files are unfragmented, the next one to be created might be highly fragmented as it could end up getting all the little free spaces scattered about your disk. We recommend that you select this option only if you are in a hurry as it runs slightly faster (depending upon the ordering options described below). If you use this option, use it often, so your new files don't stay fragmented for long.

  Full Compression: A full compression unfragments all your files and moves all your free space to the back of your disk.

  Full compression with Clear: This option does everything that a Full Compression does, plus it erases all data in any unused sectors. This is a great option to use if you want to clear any data from old files that you have already deleted. (Deleting doesn't actually get rid of the data in a file - it only erases the file's name from the disk directory.) It also clears any old subdirectories that have been deleted, which can be helpful if you ever need to recover a damaged disk that you haven't run Mirror on previously.

Ordering Options

The ordering options on the Compress menu give you a great deal of flexibility for arranging your hard disk.



1. Select **Ordering Options** from the Compress menu, or press F5, or click on "F5Ordering Opt" on the Message Bar.
   Notice that when you select **Ordering Options**, a sub-menu appears beside the first one.

   Note: You can always tell when a menu option will ask for additional information. If it requires more information, you will see a "..." after the command. This means that a dialog box will appear, asking you for additional information. If you see a ▸ at the end of the menu item, a sub-menu appears, as in this example.

2. Select one of the following file ordering options:

   Standard: puts your files in any physical order. This selection will allow Compress to move files wherever it wants to unfragment your hard disk. Compress will generally run much faster if you choose this option, and we recommend that you use it.

   DOS: places all your files in DOS order. This means that all the files for a given subdirectory will be kept together (the subdirectory itself will be moved to the front of the hard disk). This is a great option to choose to maximize hard disk performance as it will keep all data and program overlay files beside one another. This will reduce the amount of disk head movement that is needed.

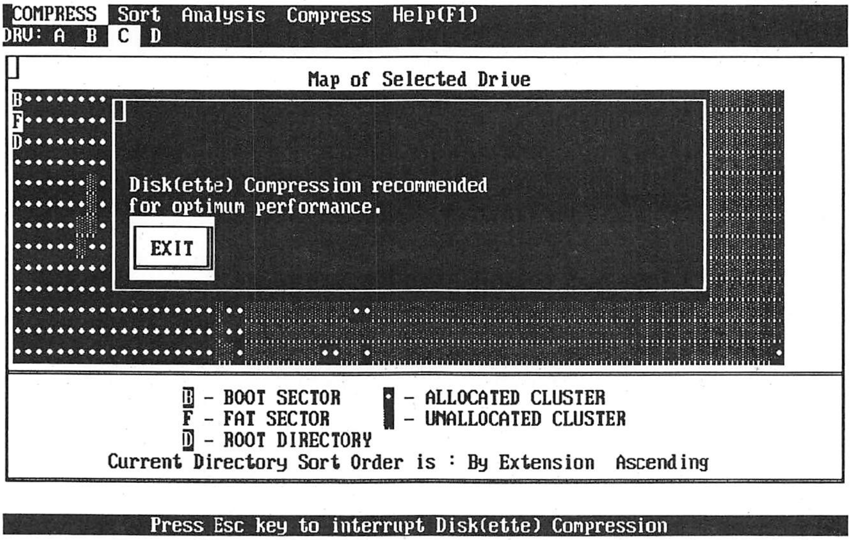
.COM & .EXE first: moves all your .EXE and .COM files to the front of the disk. If you find that you don't change your programs much, this option will move them to the front of the drive where they can be permanently stored. The benefit is that when Compress is run in the future, it may take less time if you haven't added or updated any program files. If you have, however, it will probably run slower.

Analyze Disk Organization

The Analyze Disk Organization command checks your currently selected drive for how well organized it is and tells you whether or not you need to continue with compression.

Note: Select one of the compression options before choosing the **Analyze Disk Organization** command.

- Choose **Analyze Disk Organization** from the Compress menu , or press F6, or click on "F6Org Analysis" on the Message Bar. Your screen will show a message to let you know if compression is needed, depending upon the compression method you selected.



Disk(ette) Compression recommended for optimum performance.

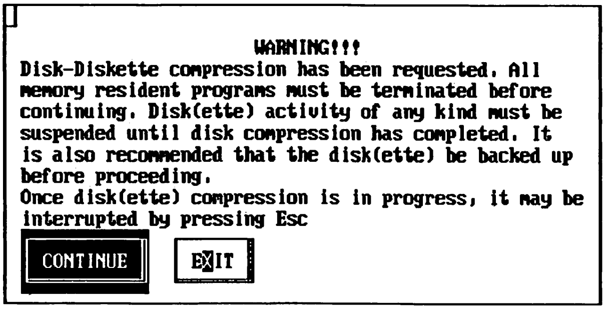
Current Directory Sort Order is : By Extension Ascending

Press Esc key to interrupt Disk(ette) Compression

Begin Compress

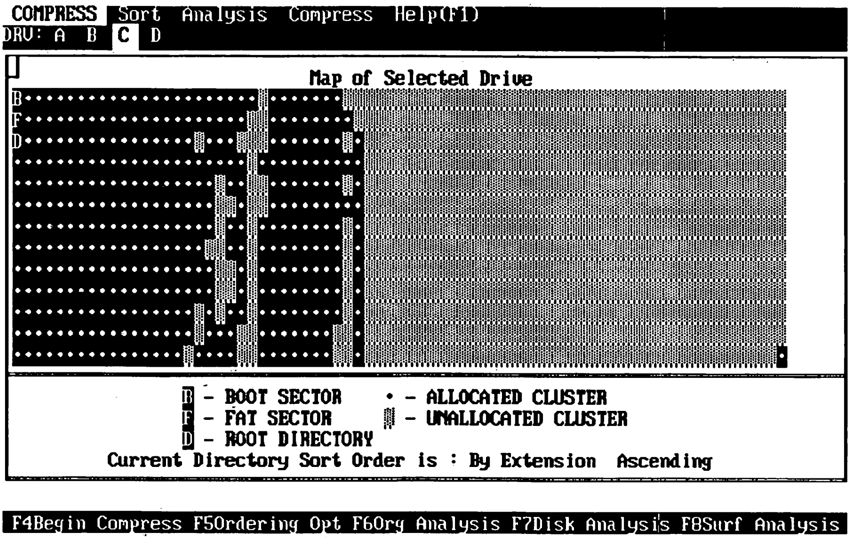
Note: If you want to have a report sent to the printer or disk, choose Print Report before you compress your disk. The report is then automatically sent to either printer or disk after Compress is done.

1. Choose **Begin Compress** from the Compress pull-down menu, or press F4, or click on "F4Begin Compress" on the Message Bar
   A warning screen appears:



WARNING!!!
Disk-Diskette compression has been requested. All memory resident programs must be terminated before continuing. Disk(ette) activity of any kind must be suspended until disk compression has completed. It is also recommended that the disk(ette) be backed up before proceeding.
Once disk(ette) compression is in progress, it may be interrupted by pressing Esc

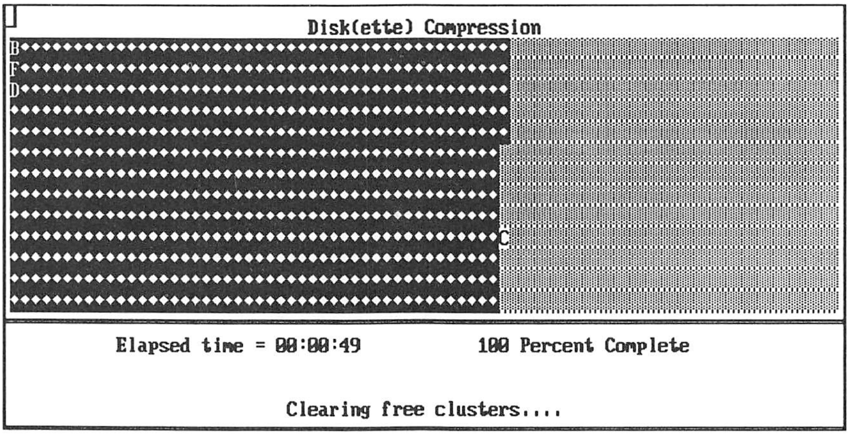
2. Select **Continue** to start Compress. A dialog box appears indicating that Compress is sorting directories and preparing for disk optimization. A progress bar in the dialog box indicates the status. Then you will see the Disk Map and Message bar area of the screen change dynamically as Compress progresses.



Current Directory Sort Order is : By Extension Ascending

F4Begin Compress F5Ordering Opt F6Org Analysis F7Disk Analysis F8Surf Analysis

After Compress has finished, your screen should look similar to this:



Disk(ette) Compression

Elapsed time = 00:00:49   100 Percent Complete

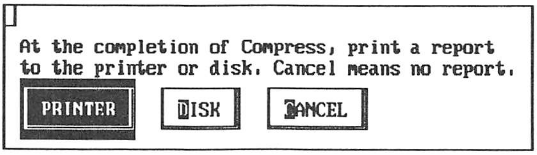
Clearing free clusters....

Note: After compression, all your files (represented by the diamond characters) have been moved to the left side of the screen. All the free space (represented by the lighter grey area) is on the right. The left part of the screen is the front part of your hard disk. If you select the Unfragment only command, you may see some free space left in between your files as this option won't necessarily pack all your files together. It just makes sure they are not fragmented.

Print Report

This command generates a summary of the compress after it is finished. It includes the time it took to perform the compress, the options selected, and the number of used, unused, and bad clusters on the disk. **You must select this command before starting the compress.** If you choose to send the report to disk, it will be written to the file COMPRESS.PRT.

1. Choose **Print Report** from the Compress menu.
   The following dialog box appears:

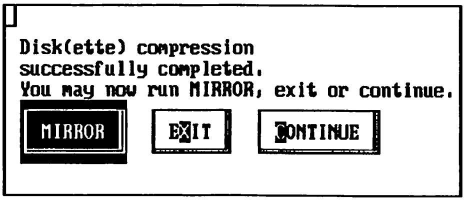


At the completion of Compress, print a report
to the printer or disk. Cancel means no report.

2. Select one of the options.

Running Mirror after Compress

After you have finished a disk compress, the Compress program will ask you if you wish to run Mirror (see the Mirror/Rebuild chapter for more information.)



```
Disk(ette) compression
successfully completed.
You may now run MIRROR, exit or continue.
```

If you have just compressed a hard disk, you should always select **Yes.** Compress has moved your files and directories around, and the Mirror file will no longer be current. It will not reflect the actual status of your hard disk's data.

Compress will look for the Mirror program in the current subdirectory and in the subdirectory the Compress program was run from.

Resident Software

Some types of resident programs, such as the DOS FASTOPEN, can be confused by the running of Compress. Since Compress moves files on the hard disk, it is highly recommended that you:

REBOOT AFTER COMPRESS HAS FINISHED!

Unless this is done, it is possible that the next program you run will destroy your hard disk format and you will lose some or all of your data! Compress will print this warning each time it is finished to remind you.

Copy Protection and File Ordering

The order of directory entries is unchanged by compression, unless sorting has been specified during Compress. But the **physical** order of disk files will be changed, depending upon the ordering option you have selected.

Files with "Hidden" or "System" attributes will not be moved by Compress. This is to make sure that any copy-protected programs you have on your disk continue to run. Many copy-protection schemes (especially on hard disks) employ the use of hidden files and subdirectories as part of the copy protection. If Compress were to move these hidden files, some copy protected programs would no longer run.

Because of this, a file might still be technically "fragmented" after Compress is run. For example, if DOS started building a file right in front of a hidden file, then extended it right behind the hidden file, Compress would not move either the hidden file or the file fragmented across it. This is done to prevent Compress from taking an extremely long time to process (this happens very rarely). Also, PC Shell's Undelete option will be able to span the hidden file so data will be recoverable after an accidental delete.

Deleted Files

Compression will destroy the last traces of any deleted files. If you want to use PC Shell to Undelete any files, be sure to do so **before** compressing the drive. Compress will clear the delete tracking file created by Mirror, if it is found.

PC Format

Your PC Tools Utilities disk includes a replacement for the DOS FORMAT.COM program called PC Format. PC Format will format hard disks and floppy disks of all densities in a manner that the PC Tools Utilities Rebuild program can recover from. The differences between PC Format and DOS Format are as follows:

DOS Format and PC Format Differences

DOS Format (Floppy Disks)

Will fill all sectors with F6 hex characters on every track, overwriting anything on the disk.

PC Format (Floppy Disks)

PC Format will first attempt to read the entire disk. If the disk contains nothing readable, or if track 0 and track 1 are empty, PC Format will overwrite every track. If the disk contains data, PC Format will leave the data intact, clear the File Allocation Table, and clear the first character of every file name in the root directory. The first character of the file name is stored in one of the reserved bytes, 16 bytes after the beginning file name in the directory. Using PC Format to format a floppy disk will allow UNFORMAT to recover even the first letter of the file names. (Rebuild will not be able to recover floppy disks unless they were formatted with PC Format.)

DOS Format (Hard Disks)

Data is not actually overwritten (with most versions of DOS), only the records of the file names in the Root directory and the location of the files (File Allocation Table) are lost.

Exception: Compaq DOS up through v.3.2, AT&T DOS up through 3.1 and at least some versions of the MS DOS supplied by Burroughs. These versions of DOS are destructive. They actually erase all data so there is nothing left to recover.

PC Format (Hard Disks)

PC Format is the same as DOS format except PC Format deletes only the first character of each file name in the root directory (and saves this character in a reserved byte in the directory). PC Format supports only high level (logical) formatting of hard disks and standard 512 byte sector size.

Getting Started

If you installed PC Tools Deluxe onto your hard disk using PC Setup, then DOS FORMAT has already been renamed to FORMAT!COM so that it won't be run. It's still there in case you should ever decide you need it, but by changing its name to FORMAT!, it won't be waiting around to wipe out your hard disk if you forget and type FORMAT. A new file, called FORMAT.BAT has been created that will run our PC Format program so you won't even have to remember to type PCFORMAT instead of FORMAT.

Running PC Format on Floppy Disks

PC Format's "help screen" can be displayed by typing PCFORMAT? This will display all of the parameters recognized by PC Format.

PC Format Parameters

PC Format allows the same options for formatting floppy disks as the DOS FORMAT command:

PCFORMAT d: [/S] [/1] [/8] [/V] [/4] [/N:xx] [/T:yy] [F:nnnk]

d:	The letter of the drive you wish to format (e.g. "C:").
/S	Copies the operation system files to the disk or diskette. This is necessary if you want the disk to be "bootable."
/1	Specifies a single-sided format.
/8	Formats a disk with 8 sectors per track instead of the normal 9 (for 360K diskettes) or 15 (for 1.2Meg disks). This allows compatibility with older versions of DOS (pre 2.0) which only supported 8 sectors per track.

/V	Gives the disk a volume label. When the format is complete, PC Format will ask you for a unique name to identify the formatted disk.
/4	Formats a 360K or 180K diskette in a 1.2 meg (high–capacity) drive. This allows use of low–capacity formats in high–capacity drives. However, disks formatted with this option in a 1.2 meg drive will not read reliably in low capacity (360K) drives.
/N:xx	Specifies the number of sectors per track to format.
/T:xx	Specifies the number of tracks to format.
/F:nnnk	Formats the drive to the specified size. Valid numbers are 160, 180, 320, 360, 720, 1200, and 1440.

Note: The /N and /T parameters must be used together. The sectors per track cannot be specified without also specifying the numbers of tracks to format. /N and /T are used to format a disk to less than normal capacity of the drive and are not normally used.

In addition to the format options allowed by DOS, PC Format includes the following options to format a floppy diskette:

/F	Specifies a full format. This means PC Format will read the data on each track, format each track, then rewrite the data. This option is slower but will clean up marginal sector ID's. (**Note:** When using the /F option the File Allocation Table is cleared as usual. Rebuild still needs to be run in order to recover the data on the diskette.)
/Q	Quickly reformats an already formatted disk. This parameter will erase the directory and FAT, but will not do a surface scan of the disk.
/R	Reformats and rewrites every track. The File Allocation Table, Root Directory and data will remain intact. /R will clean up marginal sector ID's, but will make no other changes to the diskette.
/P	Prints the information on the screen to LPT1.
/DESTROY	Formats the disk and erases it.

/TEST	Simulates the format without actually writing to the disk.

Unless the /F option is selected, PC Format will READ each track of the disk or diskette to be formatted to see if it has already been formatted and to make sure that no sectors have errors. If so, the next track is checked in the same manner. If a track is encountered that has errors, PC Format will read all the data it can, re–format the track, then re–write the data. If a track has never been used, it will just be formatted. The root directory will be cleared in a manner that Rebuild can recover from, then an empty FAT will be written. The only data that is lost is the file allocation table, which Rebuild can recreate for you as long as the disk was recently Compressed (no fragmented files).

If you select the /R (REWRITE) option, PC Format will always re–format each track after it has read the original data, and will re–write it afterwards. This will clean up a disk with marginal ID fields (which is very rare) but will run much slower if you are re–formatting a previously used diskette. It will **not** clear the directory or file allocation table – existing files will be left intact.

Running PC Format on Hard Disks

When using PC Format to format a hard disk, the options available are the following:

```
PCFORMAT d: [/S] [/V] [/Q][/P] [/TEST]
```

d:	The letter of the hard disk to be formatted.
/S	Copies the operation system files (BIOS, DOS, and COMMAND.COM) to the hard disk in order to make it bootable. Before using /S, boot the system with the same version of DOS that will be transferred to the hard disk.
/V	Allows the writing of a volume label on a hard disk.

The /Q, /P, and /TEST parameters explained on the previous page are also available on a hard disk.

Note: You should make sure all old copies of FORMAT.COM are removed from all your subdirectories. Even if you used PC Setup to install PC Tools Deluxe to your hard disk, you still might have copies of the DOS FORMAT.COM program in other subdirectories that PC Setup didn't know about. Use the PC Shell Locate command to locate all occurrences of the file FORMAT.COM, then use the Delete option to remove them.

PC Secure

PC Secure is a fast and powerful tool for keeping your proprietary data and programs safe and secure. It can encrypt, compress, and hide sensitive files on your disk.

Encryption is easy with PC Secure, and its compression feature gives you more effective use of space on your disk, as well as greater security.

PC Secure uses the DES encryption system, which has the following powerful features:

- DES thoroughly randomizes the data. The purpose of encryption is to remove the order in your data and make it appear to be random bits. By a variety of statistical tests, DES is one of the best pseudo-random number generators known.
- DES is virtually impossible to decrypt without the key.
- Even if you know some or all of the plaintext, you can't determine the key.

Note: Due to USA federal regulations, PC Secure is shipped out of the U.S.A. with the encryption/decryption option disabled. The compression/expansion option is still active, though, and this provides a moderate degree of security by itself. The Encrypt and Decrypt commands from the File menu are renamed to Compress and Decompress, and the encryption options are removed from the Options menu. The U.S.A. and non-U.S.A. versions of PC Secure are not compatible. You will *not* be able to decrypt a file with the U.S.A version that was compressed with the non-U.S.A. version and vice-versa.

CAUTION
Operated improperly, PC Secure changes from a data security program to the electronic equivalent of a paper shredder. Loss of your password will cause irretrievable loss of your data. Please take a few moments to read this chapter and familiarize yourself with PC Secure operating procedures.

File Compatibility

Data Files: PC Secure can encrypt all kinds of data files. PC Secure's compression algorithm compresses nearly any file with the exception of pre-compressed files made by such programs as ARC, which will usually become larger.

Applications: PC Secure can encrypt and decrypt nearly any application. **Needless to say, you should NOT encrypt PC Secure itself.**

Copy protection: There is one class of file which PC Secure cannot encrypt and decrypt transparently: files with copy protection. Copy protection works by hiding extra information in some out-of-the way areas of the original disk. Unless that extra information is present, the application won't run. You can encrypt and decrypt a copy-protected file, but since PC Secure doesn't read this hidden information, the decrypted file will not run.

Password protection for applications: PC Secure can be used to place other applications under password control. Encrypt the applications you want to limit access to, for example, check-writing programs, and issue the key only to authorized users.

PC Secure files: Encrypted files are stored in normal DOS format and can be copied, backed up and restored, and transmitted via modem. You can run a hard disk defragmenting program, such as Compress, safely on PC Secure files.

Networks: PC Secure is compatible with standard DOS networks, such as Novell. It's safe to place encrypted files on a network. However, a good rule of thumb is never to place your decrypted files on a file server. Instead, always copy the encrypted file to a private directory or local disk first, then decrypt it.

Starting PC Secure

Like all PC Tools applications, PC Secure has full mouse, keyboard, and color support. For details about using the mouse and the keyboard please read the "Getting Started" chapter.

PC Secure does two things: it encrypts and decrypts files. These files are locked and unlocked with keys, which are words or numbers that you enter when PC Secure prompts you.

The procedures in this section show you how to do the following:

- start PC Secure (menu method)
- enter a master password
- run PC Secure from the command line

To Start PC Secure:

1. Start the program by typing the following at the DOS prompt:

   ```
   PCSECURE
   ```

   Notice there is no space between "PC" and "SECURE". Even though we refer to the program as "PC Secure" throughout this chapter, DOS won't allow a space in the file name, so remember to leave it out when you run the program. Also, DOS does not care if you use upper or lower case letters to type a program name.

   If the screen appears fuzzy, or there are unreadable shades of grey, you can force the screen into monochrome mode by returning to the DOS prompt (press Escape) and then typing:

   ```
   PCSECURE/BW
   ```

   If you have a VGA display, you can optionally display in 350 line resolution. This will make the background screen and the scroll bars in PC Secure continuous. It may have the effect of reducing the size of the screen on some VGA adapters. This parameter is entered on the command line as follows:

   ```
   PCSECURE/350
   ```

   If you have the need for file security according to the U.S. government's Department of Defense (DOD) standards, then you can start PC Secure using the /G parameter. This parameter works in conjunction with the Delete Original File option. Any file encrypted during a session using this parameter destroys the original file according to DOD standards, which means the file is overwritten seven times then verified to make sure it will not be recovered. This process takes longer than the usual encryption process. Enter the /G parameter on the command line as follows:

   ```
   PCSECURE/G
   ```

2. Press the Enter key.

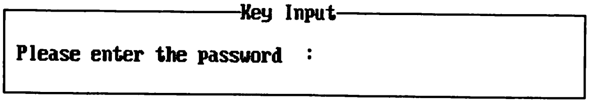
Note: The /G parameter is available in the USA version of PC Tools Deluxe only.

To Enter a Master Key:

When you use PC Secure for the first time, it asks you for a master key. This key will enable you to decrypt any file you make in the future. (See note below.) This means if the specific password for an encrypted file has been lost or forgotten, the master key can be used to decrypt the file.

Note: The master key will work on any file EXCEPT those encrypted using Expert Mode. Please read the section entitled Using Expert Mode for further details.

If you want to think about it a bit before you start PC Secure, reading the section on "Managing Your Keys" can give you some ideas for a good master key.

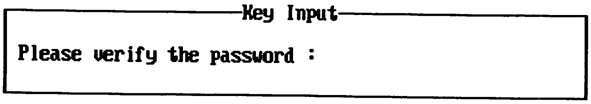


```
Key Input
Please enter the password  :
```

1. Enter your master key.
   The master key is similar to having another house key; you need to remember where you put it, but you don't want anyone else to know about it. This is a good time to record the master key on a piece of paper for future reference.

   You can use alphanumeric or hexadecimal numbers for a key:

   - An alphanumeric key can have 5 to 32 alphabetic or numeric characters and is case-sensitive. (PC Secure knows the difference between upper and lower case letters.) When you type an alphanumeric key, PC Secure displays an asterisk (*) instead of the character.
   - Pressing **F9** prompts you for a hex key. A hexadecimal key must always be 16 characters. When you type a hex key, PC Secure displays what you type. See the section on "Managing Your Keys" for a detailed explanation of hexadecimal key use.



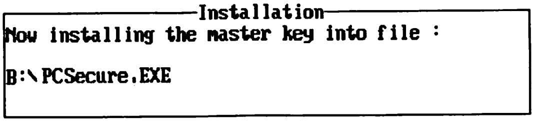
```
Key Input
Please verify the password :
```

Another dialog box appears asking for verification of your master key.

2. Enter your password again.

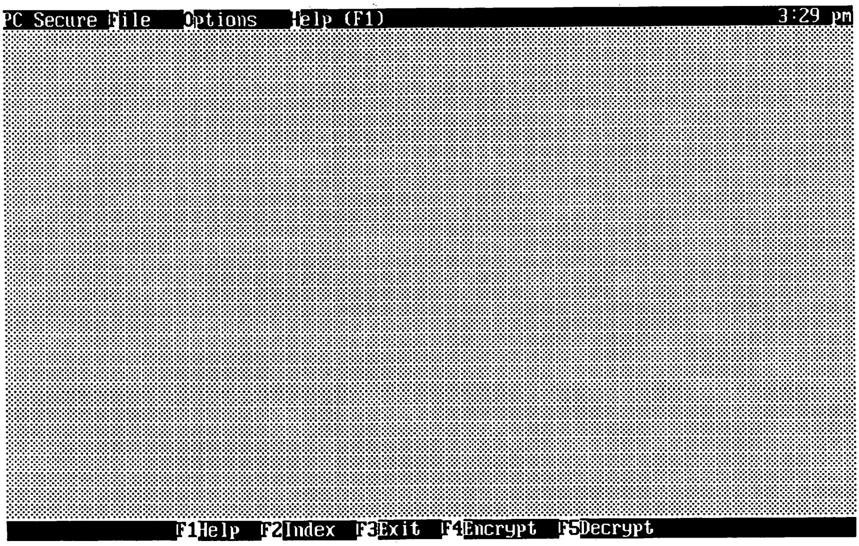
Note: If you used a hex key, you will not get the second password validation box.

After you have entered the master key a second time, a dialog box appears informing you that your master key is being installed.



```
Installation
Now installing the master key into file :

B:\PCSecure.EXE
```

Next, you see the PC Secure screen.



From top to bottom, the screen contains the following parts:

- **Horizontal menu bar:** contains the names of pull-down menus, the on-line help (F1) for quick answers and guidelines, and displays the current time.
- **Message bar:** is located at the bottom of the screen. It is used to provide additional information, keystroke options, and help suggestions. This line will change constantly to reflect where you are in PC Secure. When highlighted short cut keys (in red on color monitors) appear on the bottom line, the associated commands can be invoked by pressing the highlighted key(s) or positioning the mouse cursor on any portion of the command or highlighted key

and clicking the mouse. For example, to encrypt a file just press F4 or click anyplace on "F4Encrypt" with the mouse; this will begin disk compression. The commands disappear when the bottom line contains help messages.

The following function keys are available in PC Secure:

To	Press
Get Help	F1
Get the Help Index	F2
Exit PC Secure	F3
Encrypt a file	F4
Decrypt a file	F5

For directions on using the mouse or keyboard commands to move through the menu items and dialog boxes, please read the "Getting Started" chapter.

Running PC Secure from the Command Line

The following command-line parameters enable you to run PC Secure from the command line or as a batch file to quickly encrypt or decrypt files.

/D	decrypts the specified files
/F	performs full encryption on the specified files
/Q	performs quick encryption on the specified files
/C	turns compression off when encrypting
/P	prompts for a key
/Kxxxxx	specifies xxxxx as your key

Examples:

```
pcsecure /q /k12345 *.doc
```

will encrypt all .doc files in the current directory using quick encryption with compression, and the key 12345.

```
pcsecure /f /p *.*
```

will encrypt all files in the current directory using full encryption with compression, and pcsecure will prompt you for the key.

```
pcsecure /q /c /k12345 *.txt
```

will encrypt all .txt files in the current directory using quick encryption and no compression, with the key 12345.

```
pcsecure /d /k12345 xyz.doc
```

will decrypt the file xyz.doc using the password 12345.

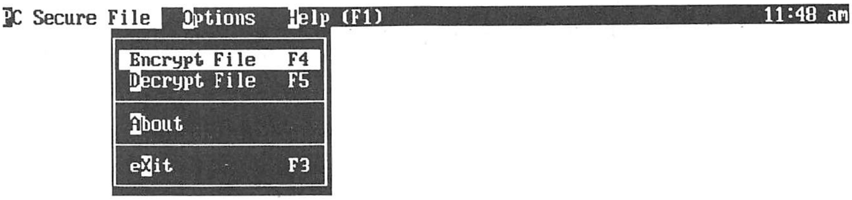
Encrypting

The **Encrypt File** command allows you to protect your files by electronically "scrambling" the contents. For more detailed information on how this works, read the "Understanding PC Secure" section.

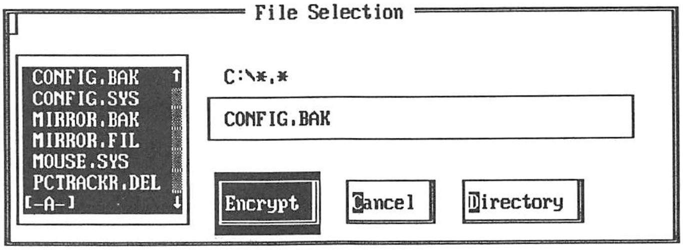
There are two methods of encryption described in the following section: encrypting a single file or encrypting all the files in a given subdirectory.

Encrypt File

- Choose the **Encrypt File** command from the File menu, or press F4, or click on "F4Encrypt" on the Message Bar.



This brings up the File Selection dialog box containing a list of the files with extensions in the current directory. In addition, drives and directories appear in the list box so you can move to a different drive or directory to select a file. Drives and directories are indicated with brackets around the drive or directory name, for example, [-C-] and [PCTOOLS]. The first file in the current directory is highlighted in the list box and selected in the text box. Pressing Enter will encrypt the file listed in the text box.



C:\*.*

CONFIG.BAK

You can either select a different file from the list box or type a file name in the text box.

To Select a File Name from the List:

Note: You can change the name of the current directory by entering a new path name in the text box and pressing Enter. You can also change the file wildcards to show all or selected files. For example, changing *.* to *.EXE will list files in the selected directory with .EXE extensions only.

Once you have the appropriate directory and list of files to choose from, perform the following task:

Keyboard

1. Select the file name you want to encrypt by pressing the Up and Down arrow keys, or the PgUp, PgDn, Home and End keys to move through the list box.
   As a file name is selected, it is highlighted and displayed in the text box.
2. Press Enter to encrypt the file.
   or
   Press Alt and E to encrypt the file.
   The password dialog box appears.

Mouse

1. Select the file you want to encrypt by clicking on its file name in the list box. (Use the scroll bar if there are more files than will fit in the list box.)
   The selected file is displayed in the text box.
2. Click on the **Encrypt** command button.
   or
   Double-click on the selected file from the list box.
   The password dialog box appears.

To Type the File Name:

When the File Selection dialog box appears, the first file in the current directory is highlighted in the list box and selected in the text box.

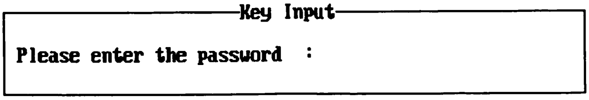
1. Tab to the text box.
2. Type a file name and extension for the file you wish to encrypt. You can also type the full path name if you want to change directories.
3. Press Enter to select the file, then press Enter again to encrypt the file.
   or
   Press Alt and E to encrypt the file.
   or
   Click on the **Encrypt** command button.

A password dialog box appears.

To Enter the Password:

This password should be different than the master key you entered earlier. The master key is used as a "backdoor" to decrypt any file whose specific password has been lost or forgotten. The password you enter now is specific for this file.

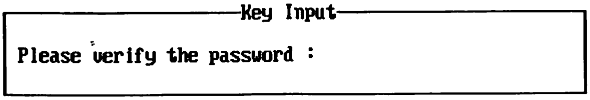
An alphanumeric key can have 5 to 32 alphabetic or numeric characters and is case-sensitive (PC Secure knows the difference between upper and lower case letters.) When you type an alphanumeric key, PC Secure displays an asterisk (*) instead of the character.



Please enter the password :

1. Type a password for this file.
   This file key is the same key you will use to decrypt the file later.

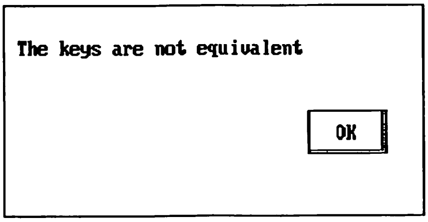
   Another dialog box appears after you have entered your password, asking for verification.



Please verify the password :

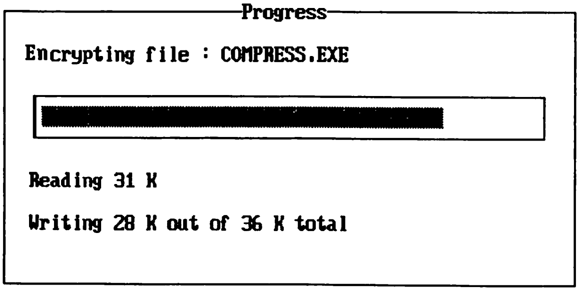
2. Enter the same password again.

   Note: If you make a mistake by typing the wrong key into one of the password dialog boxes, another dialog box will inform you that the "The keys are not equivalent."



The keys are not equivalent

When you press Enter after typing your password a second time, PC Secure starts to encrypt your file.



Progress

Encrypting file : COMPRESS.EXE

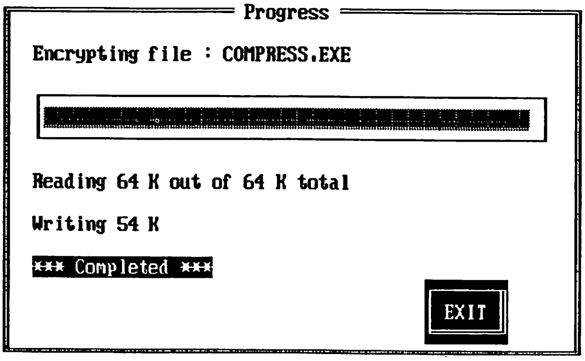
Reading 31 K

Writing 28 K out of 36 K total

PC Secure shows you its progress while encrypting.

Note: If you are using the /G parameter, once the file has been encrypted, PC Secure destroys the original file and overwrites it 7 times. This process takes a little time, and no message will appear telling you to wait.

When PC Secure is finished, the screen changes to show the following message:



Progress

Encrypting file : COMPRESS.EXE

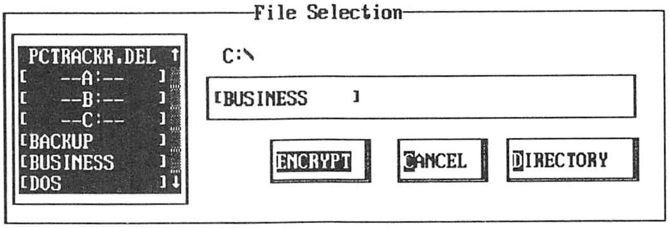
Reading 64 K out of 64 K total

Writing 54 K

*** Completed ***

To Encrypt a Subdirectory:

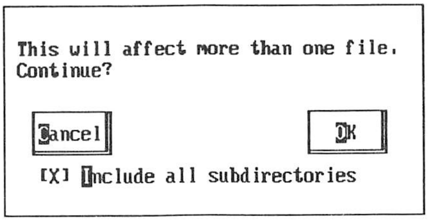
1. Choose the **Encrypt File** command from the File menu, or press F4, or click on "F4Encrypt" on the Message Bar.
   The file selection dialog box appears.



C:\

[BUSINESS]

2. Select the subdirectory you wish to encrypt.
   Directories can be easily identified because they have brackets [ ] around the name.
3. Select the **Directory** command button.
   A dialog box appears with 3 choices:



This will affect more than one file.
Continue?

[X] Include all subdirectories

Include all subdirectories: By selecting the check box, you are telling PC Secure to encrypt all nested subdirectories within the selected subdirectory. By leaving the check box blank, you are specifying that only files within the selected subdirectory be encrypted.

OK: By selecting OK, you are telling PC Secure to continue with the encryption of the selected subdirectory.

Cancel: By selecting Cancel, you will return to the File menu.

4. Select the **Include all subdirectories** check box if you wish to do that.
   Otherwise, leave it blank.
5. Select OK to continue with encryption or Cancel to return to the File menu.
   A password dialog box appears.

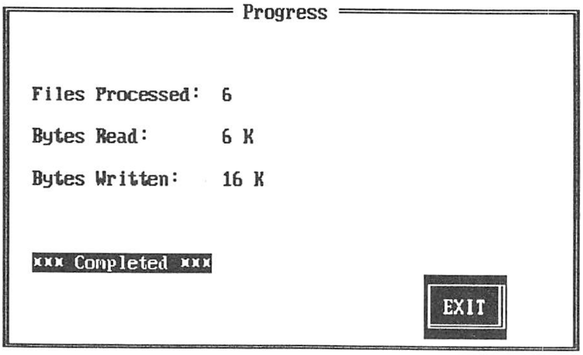
   Note: If the option **One key** from the options menu is ON (a check mark will be by its name) you will not be asked for the password for subsequent file encryptions for the duration of the session.

6. Enter a password for this directory.

This is the key you will use to decrypt your subdirectory later. (Please read the "Managing Your Keys" section if you would like some hints on good passwords.)

A second password dialog box appears asking for verification.

7. Enter your password a second time.
PC Secure starts to encrypt all the files in the subdirectory. When it is finished, the screen changes to show the following message:



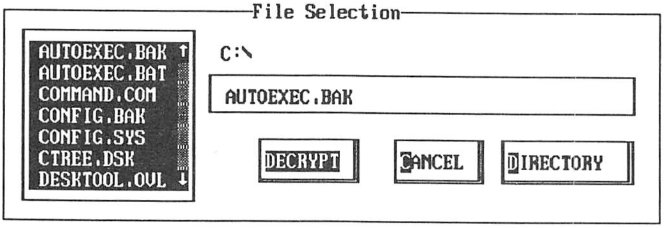
```
Files Processed:  6

Bytes Read:       6 K

Bytes Written:    16 K


*** Completed ***
```

Decrypting

The Decrypt File command allows you to "unscramble" a previously encrypted file or subdirectory. It will restore the file to its original condition.

Decrypt File

1. Choose **Decrypt** File from the File menu, or press F5, or click on "F5Decrypt" on the Message Bar.
The file selection dialog box appears.



```
C:\
AUTOEXEC.BAK
```

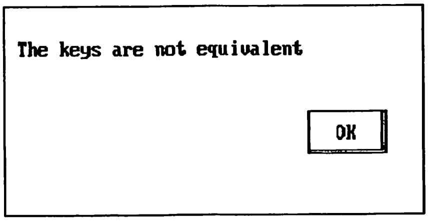
2. Select the file you wish to decrypt.
3. Select the **Decrypt** command button.

A password dialog box appears, just like the one used in the encryption mode.

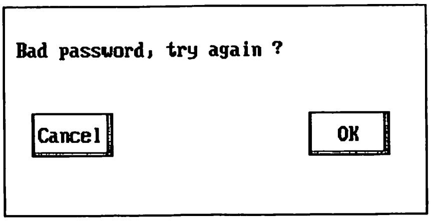
Note: If the option **One key** from the options menu is ON (a check mark will be by its name) you will not be asked for the password for subsequent decryptions for the duration of the session.

4. Enter the same password you used to encrypt the file.
   A second password dialog box appears asking for verification.
5. Enter your password again.

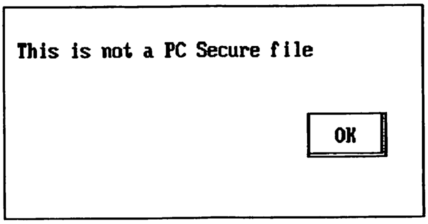
Note: If you make a mistake by typing the wrong key into one of the password dialog boxes, another dialog box will inform you that the "The keys are not equivalent."


The keys are not equivalent

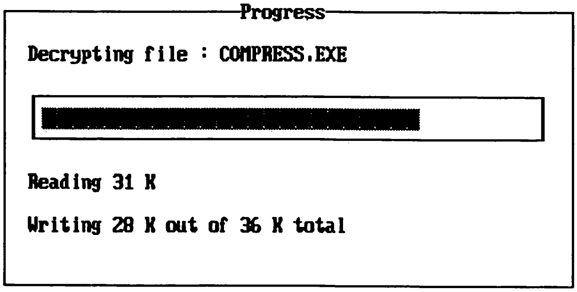
If you inadvertently type the wrong password, a dialog box will appear saying "Bad password, try again?"


Bad password, try again ?

Note: If you selected a file to decrypt that was not encrypted at all, you will see the following dialog box:

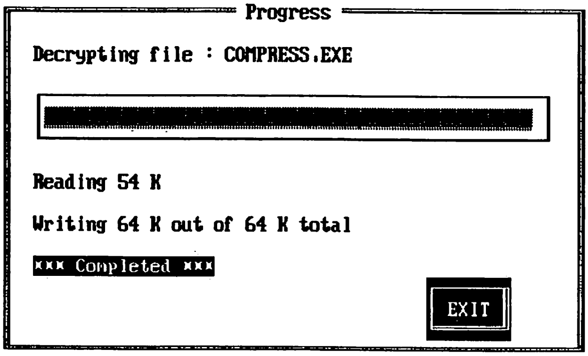

This is not a PC Secure file

- Select OK and go back to step one. Otherwise, PC Secure starts decrypting the file.



```
Decrypting file : COMPRESS.EXE

Reading 31 K

Writing 28 K out of 36 K total
```

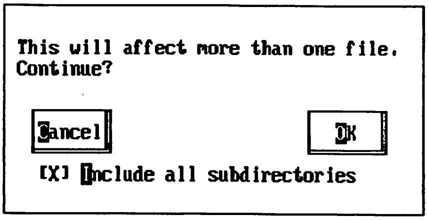
While PC Secure decrypts the file, it shows you its progress. When decryption finishes, the screen changes to show the following message:



```
Decrypting file : COMPRESS.EXE

Reading 54 K

Writing 64 K out of 64 K total

*** Completed ***
```

To Decrypt all the Files in a Subdirectory:

1. Choose **Decrypt** File from the File menu, or press F5, or click on "F5Decrypt" on the Message Bar.
   The file selection dialog box appears.
2. Select the subdirectory you wish to decrypt.
3. Select the **Directory** command button.
   A dialog box appears with 3 choices:



```
This will affect more than one file.
Continue?

[X] Include all subdirectories
```

Include all subdirectories: By selecting the check box, you are telling PC Secure to decrypt all nested subdirectories within the selected subdirectory. By leaving the check box blank, you are specifying that only files within the selected subdirectory be decrypted.

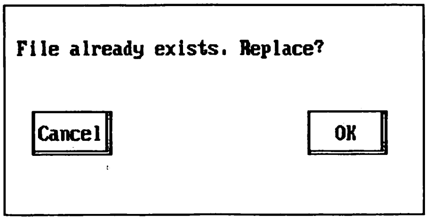
OK: By selecting OK, you are telling PC Secure to continue with the decryption of the selected subdirectory.

Cancel: By selecting Cancel, you will be returned to the File menu.

4. Select the **Include all subdirectories** check box if you wish to decrypt them. Otherwise, leave it blank.
5. Select OK to continue with decryption or Cancel to return to the File menu. If you continue, a password dialog box appears.
6. Enter the same password you used to encrypt the subdirectory. A second dialog box appears asking for verification.
7. Enter your password again. (If you get an error dialog box, please see the previous section Decrypt File for an explanation of error dialog boxes.)

PC Secure starts decrypting all the files in the subdirectory. It will show its progress during the decryption.

"File already exists" Dialog Boxes



File already exists. Replace?

This dialog box can appear if you have changed the setting of the **Delete Original File** option (found under the Options menu) to OFF. This is what happens:

- A file is encrypted. This file is called <name>.SEC after encryption. The encrypted copy is left in the same directory as the intact original file.

- You decide to decrypt <name>.SEC at some point.

- After going through the steps of decryption, the dialog box informing you "File already exists"appears.

  What has happened is PC Secure has decrypted the copy back to its original name. It sees the original file on the disk, and sends you this dialog box asking what to do.

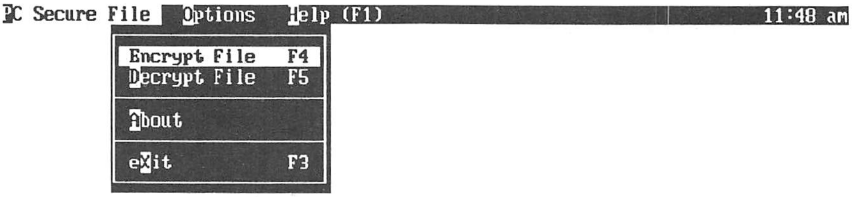
- If the original file has not been changed since the copy was encrypted, you may select OK. The decrypted copy will write over the original file.

  Caution: If the original file HAS been changed since the copy was encrypted, select Cancel. Otherwise, the decrypted copy will write over the original file and all changes will be lost. To prevent this, you should either rename or move the original file, and then decrypt <name>.SEC.

- Or, you try to encrypt both a <name>.HLP file and <name>.EXE file. You will get the "File already exits." message. Answering OK will cause the first <name>.SEC file to be lost. To prevent this, you should either rename or move one of the files.

The File Menu

The File pull-down menu provides a list of commands for encrypting and decrypting your files and subdirectories. It also provides the commands to find the degree of compression obtained and to quit PC Secure. Encryption and Decryption have already been explained.



About

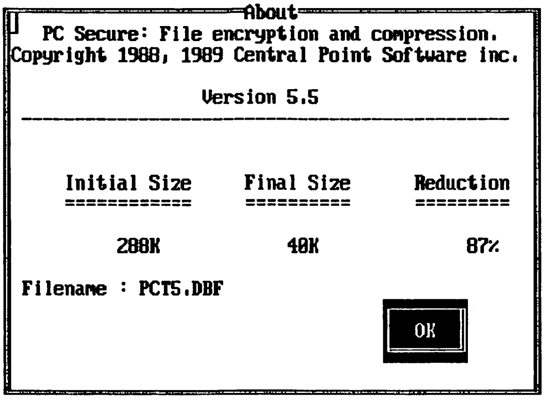
The **About** command gives you information about file compression achieved during encryption.

1. Choose **About** from the File menu.

You will see copyright information about PC Secure. It is here that you can see the compression achieved on the latest encrypted file, including the initial size of the file, the reduced size, and the percentage of compression. The file name is listed at the bottom of the box.

Note: If a directory has been encrypted and compressed, only the name of the last file in that directory will be displayed here.

2. Select OK to close the box.



```
 PC Secure: File encryption and compression.
Copyright 1988, 1989 Central Point Software inc.

                 Version 5.5
 -------------------------------------------


    Initial Size    Final Size     Reduction
    ============    ==========     =========

        288K           40K             87%

 Filename : PCTS.DBF
```

Exit

The Exit command allows you to quit and exit PC Secure.

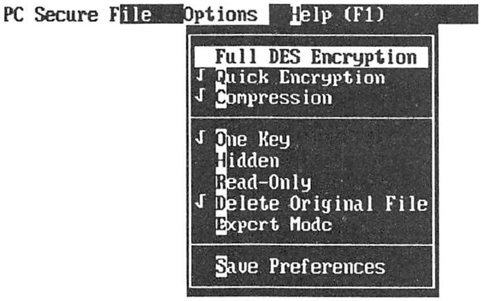
1. Choose **Exit** from the File menu, or press F3, or click on "F3Exit" on the Message Bar.
   A dialog box appears.
2. Select Exit. Select Cancel (or press Esc) to remain in PC Secure.

The Options Menu

The Options Menu provides commands that handle the way PC Secure encrypts, decrypts, or compresses your files. Choosing an option, by clicking on it or pressing Enter when the name is highlighted, toggles it on or off. No dialog boxes will appear–a checkmark on the left side of the name means the option is ON. The default settings (as shown in the illustration) are the following:

- Quick Encryption

- Compression
- One key
- Delete Original File



Full DES Encryption

Full DES Encryption runs half as fast as Quick Encryption but is theoretically more secure. With this option turned ON, Full DES Encryption does 16 encryption rounds. For more detailed information on how DES works, please read the "Understanding PC Secure" section.

Quick Encryption

The default for this option is ON. Quick Encryption runs twice as fast as Full Encryption but is theoretically less secure. Quick Encryption will do 2 encryption rounds.

Note: Turning off both encryption methods will allow you to do compression only.

Compression

Leave this on if you are encrypting a normal PC file or subdirectory for the first time. PC Secure can reduce the size of most files from 25% to 60%. Refer to the "Data Compression" section for more detailed information.

Turn off compression if:

- the file has already passed through a compression program such as ARC.
- you are encrypting a PC Secure file a second or third time.

Note: If you want to see file sizes before and after compression, pull down the File menu and choose the **About** command.

One Key

With this option ON, PC Secure only prompts for a password the first time that you encrypt or decrypt a file. It continues to use the same key for every following encryption or decryption for the duration of activity. However, if a file being decrypted has a different key than the first-time key, PC Secure asks you to enter the new key.

With this option OFF, PC Secure will prompt you for the key for every file you encrypt or decrypt.

Hidden

This makes the output file invisible to normal DOS directory routines. Making your encrypted files hidden is an easy way to remove them from casual inspection. If you should forget the name of the encrypted file, you can scan the disk for it using a program such as PC Tools Utilities' PC Shell. PC Secure will not display a hidden file.

Read-Only

This in effect "locks" the file, preventing it from being deleted accidentally. If you try to delete a read-only file, DOS displays the message "Access Denied."

Delete Original File

The default for this option is ON. This means that PC Secure encrypts your ORIGINAL file. PC Secure makes a copy of the original file, encrypts the copy, and then destroys the original. **You cannot recover a destroyed file.** The original is not destroyed until the copy is safely encrypted, so there must be enough room on the disk for both the original and the copy and a small amount of "overhead" depending on the drive type.

When this option is OFF, PC Secure makes a copy of the original file, encrypts that, and appends the extension .SEC to it. Your original file is intact, and you have an encrypted copy of it with the extension .SEC. You must have enough space on your disk for both files.

If you start a session of PC Secure using the /G parameter, make sure this option is left ON to ensure that you are achieving the U.S. government's Department of Defense standard of file security.

Caution: When you decrypt a file with .SEC appended, you may get a dialog box informing you that "File already exists. Replace?" If the original file has not been changed since the copy was encrypted, you may select OK. The decrypted copy will write over the original file. If the original file HAS been changed since the copy was encrypted, select Cancel. Otherwise, the decrypted copy will write over the original file and all changes will be lost. To prevent this, you should either rename or move the original file, and then decrypt <name>.SEC.

Expert Mode

The default for this option is OFF.

When you encrypt a file with **Expert Mode** OFF, you can decrypt it if you forget the file's specific key by using the master key. The master key is entered the first time you use PC Secure.

When you encrypt a file with **Expert Mode** ON, it cannot ever be decrypted if you lose your file key. Your master key will NOT work. This mode is intended for your most sensitive data.

For more detailed information on expert mode, please read the section on "Using Expert Mode."

Save Preferences

The Save Preferences command will allow you to save all the settings you have chosen in the Options menu. It is remembered the next time you start PC Secure.

1. Choose **Save Preferences** from the Options menu.
   PC Secure automatically saves your current settings in the same directory as your PCSECURE.EXE file.

Understanding PC Secure

DES is a block cipher, working by a combination of transposition and substitution. DES starts by dividing the incoming data into blocks of 64 bits. Next, during the "key expansion" phase, the 56 bits in the key are permuted into 16 32-bit keys for internal use. After that, the bits are reordered or transposed. The 64-bit block is split into 2 32-bit blocks. Then, for a total of 16 steps, or rounds (2 for quick compression), a 32-bit block is combined with the expanded key and used to index a substitution table. The 32-bit blocks are swapped, and the result from each round is fed to the next. Finally, the bits are transposed once more.

Using Expert Mode

Since the underlying DES algorithm is strong, the entire security of your encrypted files relies on the way you use it.

Expert Mode Off (Default Setting)

If you encrypt your files using the default setting (Expert Mode off), you can decrypt them with either the master key or the file key. In effect, the master key acts as a backdoor which can decrypt any file encrypted with Expert Mode off.

Expert Mode On

If security is your primary concern, you should turn on Expert Mode **BEFORE** you encrypt sensitive material. This removes the master key backdoor, so the encrypted file can only be decrypted by the file key used at the time of encryption.

Caution:

If you encrypt with Expert Mode on, you can only use the file key for decryption. If this key is lost, there is no known way to decrypt the file.

Managing Your Keys

There are three main points to managing keys:

- Choose keys that can't be guessed easily.
- Guard your keys from being revealed to other people.
- Never lose your keys.

Alphanumeric and Hexadecimal Keys

PC Secure allows you to choose either an alphanumeric or hexadecimal key.

To Enter Alphanumeric Keys:

An alphanumeric key may be any string of letters, digits, or punctuation marks. It must be at least five characters long (shorter keys than this are too easy to guess through sheer luck) and may be as long as 32 characters. Alphanumeric keys in PC Secure are case sensitive. This means that "flower," "Flower," and "FLOWER" are treated as three distinct and different keys. You must remember the exact spelling of an alphanumeric key.

To Enter Hexadecimal Keys:

When the dialog box for entering a key appears, press the **F9** key, and PC Secure prompts you to enter a hexadecimal key. A hexadecimal key consists of any combination of the digits 0-9 or the letters "A" to "F" (or "a" to "f"; PC Secure is not case sensitive for hexadecimal keys.) Hexadecimal keys are always 16 characters in length. Since typing in a long number can be an error-prone process, PC Secure displays the characters of a hexadecimal key as you enter them.

For your convenience in typing, PC Secure allows you to enter a hexadecimal key as one string of 16 characters, two strings of eight, or four strings of four characters, separated by spaces.

Choosing a Key

Here are some ways to pick a hard-to-guess key:

- **Random Dictionary Method:** Close your eyes, open a dictionary, point at the page, and open your eyes. The closest word becomes the first word of your key. Repeat the process, and find a second word. These two words are your new key.

- **Random Hexadecimal Method:** Use a mechanical method to generate the number, since it is difficult for people to think up a genuine random number. This is the strongest key, but be sure to write it down. Or, open a table of random numbers using the dictionary method above, then convert the decimal to a 16-digit hexadecimal number. Or, flip a series of coins, then convert the head/tail sequence to a 16-digit hexadecimal number.

Data Compression

PC Secure has the ability to compress your files in one pass as it encrypts with no perceptible loss of speed. This compression feature means your files take up less room on the disk, and are faster to transmit via modem or back up to a floppy disk.

PC Secure uses block-adaptive Lempel-Ziv-Welch (LZW) compression. This technique, unlike Huffman coding (another widely used compression algorithm), can be done in one pass, and does not require storing a translation table with the file.

File Types that Won't Compress

Although PC Secure will compress most PC files by a significant amount, there are a few kinds that won't shrink under LZW, or will even grow larger. Files that have already been processed with some form of compression probably can't be further compressed by PC Secure.

For example, a word processor's spelling dictionary would actually grow by compressing it. The same is true for files which have been compressed by an archiving utility such as ARC. For these types of files, disable the compression option.

Note: Disable the compression option the second or third time you encrypt the same PC Secure file.

Minimizing the Effects of Data Errors

Note: Encrypted and/or compressed files are binary files; do not use an ASCII transmission method.

Since the translation table is rebuilt on the fly when decompressing, any errors in the file will spread. If phone noise causes the first "the" in a file to be read as "thb," all subsequent occurrences of this string will be decoded as "thb." Under normal operating conditions, this type of error is rare.

File-transfer protocols such as Xmodem or Kermit incorporate error detection and re-transmission to make sure data is received correctly. However, if you are preparing a file for archival backup or for transmission over a very noisy phone line, you might want to disable compression just to make absolutely sure the file can be recovered correctly.

Transferring Encrypted Files

When transferring DES-encrypted data, both parties must agree on a key for both encrypting and decrypting. The computers on both ends should have:

- communication packages that support Xmodem such as the PC Tools Desktop Telecommunications application.

- the PC Secure program.

Transferring Files via Modem to Another PC

Note: Transferring encrypted files from point A to point B requires some prearranged method for agreeing on a key. Keys, obviously, should never be transmitted in the clear over the phone. The best method for exchanging is to pick a key that will be used for all transmissions and deliver that key to the branch office (or point B) via a trusted courier, a scrambled phone line, or some other "secure" channel.

1. Transfer the key to the recipient.
2. Start PC Secure at the transmitting site.
3. Encrypt the file with PC Secure using the prearranged key. PC Secure automatically adds a header encoding all of the PC Secure settings.
4. Start the communications program on both ends. Transfer the file using your communication program. Close the communications programs.
5. Decrypt the file with PC Secure at the receiving site using the prearranged key. PC Secure uses the encoded header to recreate all of the original settings.

Transferring to/from Macintosh Computers

The programs you use on both MS-DOS and Macintosh machines must support binary transfers. It is recommended that you use Xmodem or another error-detecting protocol.

The Macintosh on the other end must use the Macintosh version of PC Secure (part of the PC Tools Deluxe package for the Macintosh).

To Transfer an Encrypted File from a PC to a Macintosh:

1. Transfer the key to the recipient.
2. Start PC Secure on the PC.
3. Encrypt the file using the prearranged key.
4. Make sure you can successfully send a binary file. When you succeed, you can send encrypted files.
5. Transfer the encrypted file onto a Macintosh disk (you can modem the file, access it over a network, use the Deluxe Option Board (DOB) to copy the file, or use the Apple File Exchange to convert the file).

Note: If you are using Deluxe Option Board software (MCP files) prior to version 5.3, you must do step 6 in order for the Macintosh version of PC Secure to recognize the encrypted file. If you are using DOB software 5.3 or higher, MCP will put the correct type and creator headers on any files with the .SEC extension, so skip ahead to step 7.

6. On the Macintosh, use Mac Tools to change the file as follows:
    a. Open Mac Tools by double-clicking on its icon.
    b. Insert the disk containing the encrypted PC file.
    The disk window should show the contents of the disk.
    c. Select the encrypted file by clicking once on it.
    d. Choose the **InfoEdit Files** command from the File menu.
    InfoEdit shows you the Type and Creator values for any file, and allows you to change these values.
    e. In the File type box, type: DesC (capital D, little "es," then capital C)
    f. In the File creator box, type: DesE (capital D, little "es," then capital E)
    g. Select OK. The new values will be written.
    h. Exit MacTools.
7. Run PC Secure on the Macintosh.
8. Select Decrypt from the menu, and select the file you just changed.
9. After the file is decrypted, you must return to MacTools to change the newly decrypted file's Type and Creator to whatever application you wish to use. For a word processor, you can change the Type to TEXT. Any word processor will then open the file.

To Receive an Encrypted File from a Macintosh Computer:

1. Get the key from the other site.
2. Encrypt the file on the Macintosh using PC Secure.
3. Transfer the file to a PC disk using one of the methods described above.
4. Decrypt the file on the PC using PC Secure.
    You will see three files after decrypting:
        <filename>.NFO
        <filename>.RSC
        <filename>.DTA

The .NFO extension contains Finder information that came over from the Macintosh. The .RSC extension contains resource fork information that came over from the Macintosh. The .DTA extension is the file that actually contains the data from the original Macintosh file.

Appendix A

Memory Resident Programs

What are They?

Memory resident, or terminate and stay resident, programs (TSRs) are small applications that remain ready to be called up at a moment's notice. These programs may be brought up over other active programs, such as Lotus 123, WordPerfect, etc. Some TSRs allow DOS command type functions, Copy, Delete, Format, just to name a few. PC Shell is an excellent example of this type of utility.

The Desktop TSR was written to help counteract paper clutter on a desk. Phone dialers, notepads, even calculators can pop-up over your spreadsheet for a quick call, note or calculation. Once you've used a desktop utility, its hard to imagine ever being without one.

TSRs can be very helpful in saving time. TSRs can also be a source of frustration, especially if you use more than one in your system. We have taken great pains to make both PC Shell and Desktop well behaved. These two products should have very little, if any, compatibility problems.

The next few sections of this Appendix will deal with how TSRs work, problems they may cause and what to do about them.

How Do TSRs Work?

TSRs were first developed by Microsoft with the Print command. Through Print, you could load different print jobs into the computer's memory and return to other tasks. The computer would busily print the jobs, while you created other documents. Other software manufactures thought if Print could do this, why not do it with other types of applications. So the TSR was born. Soon, you could jot down notes on what to bring home for dinner or figure your entertainment budget, all without ever leaving your spreadsheet.

In actuality, TSRs don't really allow you do more than one job at a time. They still use the same processor as other programs. The only difference is they suspend the main application while they do their work. This means even though Print was giving the illusion of doing more than one job, it really was suspending the current application for a few milliseconds, sending data to the printer and returning control to the current application. Usually it happened so fast it was hardly noticeable. This is similar to what most TSRs do. They suspend the main application, do their jobs and return to the same place you left off. Hopefully, all without a hitch!

The way a TSR loads into your system is generally through the AUTOEXEC.BAT file in the root directory of your bootable drive. By doing this, the memory-resident program is always ready to go when called upon. TSRs can also be loaded from the DOS command line. Once a TSR is loaded in memory, it stays in a section of memory until activated by a certain keyboard sequence (called a hotkey). With these hotkeys, the program comes alive, over your other programs. Some TSRs require a fairly large chuck of memory to be set aside to remain resident Unlike these, PC Shell requires a small kernel of memory to remain dormant. When activated, PC Shell and Desktop save part of your computer's memory to the hard disk before loading the rest of their code. This allows them to use all the memory they need while active and yet take almost no memory from your other non-resident programs.

Can They Cause Problems?

With the advent of TSRs came a whole new set of problems. Occasionally, they can cause the system to hang, or worse yet, lose data. To be fair though, all programs can do these things. When DOS was written it was never really intended to do the things it must for TSRs. Only through careful programming can TSRs be useful products. Unfortunately, standards for writing TSRs have not been universally adapted by the industry.

Most TSRs are incredibly handy and extremely well written, but by their very nature, they may conflict with certain applications or usually each other. When this happens, problems can follow.

What Can I Do to Fix the Problem?

Generally, if you follow the manufacturer's instructions for installing the program, all works well. Sometimes though, problems will arise. Two of the most common TSR conflicts are

- Conflicts with other TSRs
- Conflicts with applications.

Conflict with Other TSRs

If a problem arises after installing a new TSR, chances are it is conflicting with another TSR already in the system. Some symptoms of this are

- Computer will not completely boot up (start).
- A TSR will not come up after the correct hotkeys are pressed.
- The system hangs when entering or exiting a TSR.

As with any problem, you will need to put on your detective hat and dig into the cause.

The installation manual for your software (especially TSRs) should inform you if the AUTOEXEC.BAT file was changed to accommodate the new program. If the file was changed, the placement for the new TSR may conflict with another existing TSR. The loading order is critical for some memory-resident programs. The steps you will need to take to correct this problem are the following:

1. Load your AUTOEXEC.BAT file into a text editor, like the Word Processor in PC Shell or Edlin. Don't worry, the AUTOEXEC.BAT is a text file and is easily read and edited.
2. Compare the file with the following suggested loading order guideline:
   - DOS internal commands (path, prompt, echo off, etc.)
   - DOS external commands (mode, print, keyb, etc.)
   - Mouse commands
   - print spoolers
   - Mirror
   - PC-Cache
   - PC Shell
   - PC Tools Desktop
   - Menu or shell programs (1DIRplus, Xtree, Direct Access, etc.)

   Note: In some cases, print spoolers need to be loaded before DOS print. If you still have difficulties, try reversing their loading order.
3. If changing the loading order doesn't help, then you will need to find out which programs are conflicting with each other. To do this, boot from a master DOS disk in drive A and move to drive C. This will clear out any memory-resident programs and allow you to start with a clean slate.
4. Start typing each line from your AUTOEXEC.BAT file, one line at a time. Don't forget to set the path statement. It should be one of the first lines in your file. After loading in a TSR, test it. If it works fine, go on to the next line. Through this process of addition and testing, you should find out which programs are conflicting.

5. The fix may be as simple as changing the loading order of the conflicting programs. It may also be that the programs are conflicting because they both use the same hotkey setup. If so, refer to the program's manual for changing the hotkey setup for better compatibility.

Conflict with Applications

If the TSR you are using will not pop up over your spreadsheet, word processor, etc., or will not correctly return you to these programs, the TSR may simply not be compatible with that particular program. Here are some common problems:

Graphics mode: Some programs are designed to run in graphics mode. If an application is running in graphics mode and the TSR does not support graphics, the screen may fill with garbage characters, or just refuse to come up at all. To solve this problem, see if the program can be run in text mode. If it can, and this is acceptable to you, then you can use your TSRs from inside your programs running in text mode.

EGA graphic cards can be another source of problems. A TSR cannot read the current video settings as many of the EGA's registers are write-only. This doesn't cause problems while running the TSR, but when the TSR tries to restore the video display to the state it was in before the TSR was activated, it doesn't have all the information it needs, so it makes a best-guess. Often it will guess correctly and the screen will be returned properly. Sometimes, especially if several different colors were used, the color may be wrong. The solution to this problem is to run your EGA graphics program in black and white mode, or to not use your TSR while it is running.

Memory: The other common problem with TSRs and applications is an error due to the lack of memory. Remember, TSRs do allocate a piece of memory to do their job. The more TSRs you use, the more memory you take away from other applications. Large databases and spreadsheets need almost all available memory to run. If you receive an error that indicates you do not have enough available memory to run the application, you may need to remove some of the TSRs in your AUTOEXEC.BAT file to free up enough memory to run a particular application.

Both PC Shell and Desktop use a virtual memory scheme to minimize memory usage when not active. When activated, they swap out allocated memory to files on the hard disk. This allows them to utilize large portions of system memory to perform their functions. When finished, they carefully restore the computer's memory information, leaving no trace of ever being activated. What all this means to you is PC Shell and Desktop only tie up a small amount of memory when inactive. Once activated, they both take full advantage of available system memory to perform their functions quickly and efficiently.

Hotkey Conflict: The same keystrokes the TSR is using to activate itself may also be used to perform a function in your underlying program. The best fix is to change the hotkey setup for the TSR. Both PC Shell and Desktop have this capability. If changing the hotkey setup is not available in the TSR you are using, then the application may have the ability to change its keystrokes.

Now What?

If all else fails, give the manufacturer's technical support group a call. They can generally help with loading order problems and the like. It is also important to software manufacturers to know which programs are causing conflicts, so they may be addressed in a later version, if possible.

This information was intended to answer some questions on TSRs and save you a phone call to technical support. At the very least, it may give you better ideas on where to look for a solution when problems arise.

Appendix B

Having Trouble?

The following error messages and probable solutions are listed to help if you should encounter one of them in the course of using any of the PC Tools Utilities programs. They are listed under the program name that would issue them. Please check this list to see if the error message you are experiencing is here before you call for technical support.

PC Shell

PC Shell has blinking characters on screen on CGA and EGA monitors.

Check the back of your monitor to see if the "Manual" feature is on. If so, turn it off. If your underlying application has blinking characters after you have hotkeyed into PC Shell or Desktop and then hotkeyed out again, you can set the high intensity on exit option in the program's change color dialog box.

Exiting Shell blanks the screen.

If you have a different version of ANSI.SYS (for example, GANSI.SYS, VEGAANSI.SYS, etc.) try using that instead of your regular ANSI.SYS.

FAT appears to be damaged.

If the FAT does not conform to DOS standards, this message is issued. The FAT may have been damaged by another program or maybe the user inadvertently modified it with disk edit. You will need to correct the damaged FAT by running Rebuild.

Cluster chain in use, unable to recover this file.

Issued by Undelete. The first cluster of the file is already allocated by another file. Undelete will not be possible.

File already exists, press any key to continue.

During Undelete, the first character of a file was requested. However, with this first character, the file name generated already exists. Another first character is required.

Automatic recovery is impossible, you must use manual recovery.

During Undelete, a file was selected but the first cluster is already allocated. Automatic recovery is impossible and the user is forced to use the manual mode.

Overlay file not found.

This message is issued when an error occurs when trying to load PC SHELL.OVL. Something has made the file inaccessible. Most likely the file was deleted, renamed, changed, or moved.

Vectors are not as expected. Other memory-resident programs may have been loaded after PC Shell. Removal of PC Shell may produce unpredictable results.

During the removal of PC Shell as a resident program, it was discovered that the interrupt vectors have been changed in a manner that could very likely mean that another program was made resident after PC Shell. If this is so, and you continue, unpredictable results could occur. The issuance of ASSIGN, PRINT, MODE or FASTOPEN could cause other resident programs to be installed. If this message is given, you should NOT continue, but reboot to regain the memory.

Sector is in the system area – confirm update by pressing "U" ("Esc" to cancel).

Issued by the sector editor when updating a sector that is part of the Boot, FAT or the root directory. You are being given a warning to this effect and have the opportunity to change your mind.

Any of the following messages may be issued when creating or using the PCSHELL.OVL:

Overlay path is bad
No handles for overlay file building
Access denied to build overlay file
Bad handle detected
Overlay file build stopped. Unknown msg

You can also use the /Od parameter to force the use of a different drive for the overlay file.

If the error occurs during initialization, you might try using another drive for the overlay file. If the error occurs during normal operations, the overlay file has become inaccessible for some reason. The most likely reason is a lack of handles. To correct this, increase the specification for the FCBS and FILES parameters in your CONFIG.SYS file. Also, if the overlay file has been deleted or modified, a problem can occur. This, of course, should be avoided.

Graft would cause duplicate entries Cannot prune current directory.

These messages can be issued during directory maintenance, and indicate the reason the requested maintenance cannot be performed.

Cannot copy a high capacity diskette onto low capacity diskette drive.

Disk Copy issues this message when an attempt is made to copy a 1.2 or 1.44 Meg diskette to another drive that cannot duplicate the capacity. The same drive should be used for both Target and Source.

Invalid or unlike drives specified or must be a single drive copy.

Disk Copy issues this message when the specified drives have no chance of using the same media and capacity.

This function supports only floppy diskette drives.

Disk Copy and Compare only operate on floppy drives.

Error(s) detected, copy may be unusable.

During the copying of a diskette, errors were detected. The data read, even though it may be bad, was used to create the copy. This may render an unusable diskette useable in spite of the errors.

Track 0 bad, disk unusable.

Disk Format can tolerate no errors on the first track. This is where all the DOS control information is stored and it must contain no errors. Errors anywhere else on the diskette can be tolerated and are recorded on the first track so those areas will never be used. This normally means the diskette is bad, but also, it may indicate a dirty disk drive. You should clean your disk drives regularly, at least once a month.

Invalid drive specified.

A function was requested that required a floppy drive. The drive letter given does not represent a floppy drive.

The following messages are issued by the general error handler:

FILE NOT FOUND.
PATH NOT FOUND.
NO HANDLES LEFT, CHANGE CONFIG.SYS.
FILE ACCESS DENIED (directory full?)
ERROR (inv. handle–report to CPS)
ERROR (invalid access code)
Disk full, should not occur.
ERROR xx (unknown–report to CPS)
Unknown error
Bad command passed to diskette i/o
Bad address mark or drive not ready
Write attempt on protected diskette
Requested sector not found
DMA overrun on operation
Attempt to DMA across 64K boundary
Bad CRC on diskette read
Controller failure
SEEK operation failed
No response (not ready condition)
Bad request
Unknown media type
Sector not found
Printer out of paper
Write fault
Read fault
Unable to read sector

Any of these errors might occur during the execution of almost any requested function. Correct any problem that is obvious and retry the operation. Ignoring a given error should only be done when you are aware of its implications. If the error is uncorrectable, the function is terminated.

The CPU has been tested and has been found to allow interrupts after a change to the stack segment. It should be replaced with a more recent version as it could cause random system problems.

When exiting the System Information service, the CPU is tested. PC Shell is written such that this deficiency should not cause a problem, but other programs you have may display occasional problems that can be explained no other way. These problems have been noted on some early 8088 chips.

No hard drive detected. No parking performed.

The Park service could find no hard drive with the BIOS services to park.

Mirror

The following error conditions can occur when running Mirror:

Drive x error reading system areas.

An error occurred reading either the FAT or the root directory. Run Disk Verify in PC Shell to check the actual problem.

Drive x error writing system areas.

An error occurred while updating either the FAT or the root directory. Use CHKDSK to determine the extent of any damage. CHKDSK/F may need to be used to correct the problem.

Drive x error writing MIRROR image file.

An error occurred writing to the MIRROR image file, MIRROR.FIL. Most likely, one of the allocated sectors is bad. Delete all MIRROR files and run Disk Verify in PC Shell to find and mark those sectors as bad. Then rerun MIRROR.

Drive x error tracking MIRROR image file.

During the course of determining the location of all of the pieces of the the MIRROR image file, an error occurred. This tracking is mandatory since the location of all the pieces may not be available when running Rebuild. This should not occur. If it does, it is recommended that you delete the MIRROR files with PC Shell and retry running MIRROR. The file names to delete are MIRORSAV.FIL, MIRROR.FIL, and MIRROR.BAK.

Drive x error. Could not open MIRROR image file.

For some reason, MIRROR.FIL could not be opened. There may be too many files in the root directory (commonly restricted to 512 files on a hard disk). There may be too many files open in the system (FILES= in CONFIG.SYS too small). Perhaps, file sharing is in effect in a system with non-IBM networking.

Drive x error. We were unable to find the MIRROR image file in the root directory of the hard drive.

MIRROR.FIL has been created, but since its creation, MIRROR is unable to find the associated directory entry to extract the necessary information. It may have been deleted or renamed by another resident program.

Drive x error. Cannot update the MIRROR control file.

Indicates the inability to place the final descriptive information into the MIRROR control file. An unstable sector may have been used that needs to be marked bad in the FAT. Delete all MIRROR files and run Disk Verify in PC Shell to mark any unallocated bad sectors in the FAT and re-run MIRROR.

Drive x error. We found some data in a file allocated in the last 1/4 of the disk that looks like our MIRROR control file. Please correct or run Compress to free some space, then re-run MIRROR. If you have already run Compress, then there is a file marked "HIDDEN" that is in the way.

The MIRROR control file signature was found in a sector allocated to another file. If Rebuild were run, it would make false assumptions based on the existence of this sector. Most likely, MIRORSAV.FIL has been renamed, and MIRROR cannot properly operate. Either rename the file correctly or delete it.

Drive x error. Control record insufficient for all info needed for this drive.

The amount of data needed to keep track of the MIRROR image file itself exceeds the space available in the first two sectors of the image file.

Drive x problem. The BOOT sector for this drive is incompatible with MIRROR.

A properly formatted disk should contain in the BOOT sector all the necessary information to describe the physical characteristics of the drive itself. The information disagrees with the physical characteristics as given by DOS. An old style 8 sectors per track disk can display this tendency unless it is formatted with PC Shell.

Drive x error. There must be at least one cluster available at the end of the hard drive. Use Compress to free some space, then re-run MIRROR. If you have already run Compress, then there is a file marked "HIDDEN" that is in the way.

MIRROR places its one cluster control file as close to the end of the media as possible, within the last 25% of the media. The further the found spot is from the end, the longer both MIRROR and REBUILD run. Both programs search from the back end and may be further slowed with bad sectors whether or not they are marked bad in the FAT.

OK to proceed? (Y/N)

If the switches are incorrectly set, the hardware may interfere with the fetching of data to be written to the disk. This interference will change the data fetched. No errors will be reported. Only when the written data is subsequently used will the problems arise. The extent of the problem depends on the individual configuration.

Drive x could not be processed.

DOS considers this an invalid drive letter.

Drive x being processed.

The drive specified was recognized on the command line or taken by default and is being considered for the MIRROR process.

Drive x error. Insufficient space for MIRROR image file.

Your hard disk is too full to use MIRROR without deleting some files first..

Rebuild

No drive letter specified.

REBUILD requires the drive specification.

Drive x could not be processed.

DOS considers this an invalid drive letter.

Bad sector; being bypassed.

While searching, a bad sector was encountered and is being bypassed. This may be noticeable when DOS retries the read operation.

The LAST time MIRROR was used was at xx:xx on mm/dd/yy. The PRIOR time MIRROR was used was at xx:xx onmm/dd/yy.

Indicates when one or both of the files were created.

Are you SURE you want to update the SYSTEM area of your drive x. (Y/N)

All validation is complete. REBUILD is on the verge of actually updating the BOOT, FAT and root directory.

If you wish to use the LAST file as indicated above, press "L". If you wish to use the PRIOR file as indicated above, press "P". Press ESCAPE to terminate REBUILD.

When two image files are present, you are given the choice of which to use. Normally, the LAST ("L") would be specified. If this does not provide the recovery desired. You can rerun REBUILD and use the PRIOR ("P") file.

MIRROR image file not found.

No usable MIRROR image file was found. You may have requested a good image file be bypassed and might need to re-run Rebuild to use the previously bypassed file.

The MIRROR image file found has inconsistent information. It cannot be used.

Rebuild is terminating. It found no useable file, but it did find what at first appeared to be a useable file, but upon closer examination of the data in the file, it did not seem useable. It is possible that the drive specified needs to be accessed through a special device driver. You should have a bootable floppy disk that allows access to all drives in the configuration. Drives with non-512 byte sector sizes are a good example. Partitioned hard drives and Bernoulli boxes are other examples. The bootable floppy with the device drivers should be used to boot the system prior to running Rebuild.

We were unable to find the Mirror control file. If you want us to search for the Mirror image file through the entire hard drive, reply "Y", else reply "N" to end Rebuild.

The Mirror control file may have been damaged. We can still look for the file, but it will take a while since every cluster must be read until good information is found.

A suspected MIRROR file starting at sector xxx has been found. Do you wish to use this file for rebuilding or continue searching?
"Y"= yes, use this file. "N"= No, keep searching.

No Mirror control file was found and the user indicated searching the whole disk. A suspected file was found.

The suspected Mirror file is invalid. Continuing search.

No Mirror control file was found and the user indicated to search the whole disk. A suspected file was found and the user wanted it used. It was found to be invalid and is being bypassed.

The System area of drive x has been rebuilt. You may need to reboot the system.

Rebuild has successfully run to completion. In order to use this drive as you normally would, it may be necessary to reboot to insure proper initialization of the entire system.

The file is a backup to a more recent Mirror image file.

No Mirror control file was found and the user indicated to search the whole disk. A suspected file was found, but it is known to be a backup image file. It may not be valid.

Delete Tracking

Two beep tones

Whenever Delete Tracking cannot be performed for a given deletion, the computer will beep twice. Some reasons are as follows:

- the file to be deleted did not exist
- the file to be deleted was a temporary or backup file

(used by many word processors).
- insufficient disk space to create a tracking file.
- no directory entry available in the root directory.
- access to a particular file is denied.
- ASSIGN was used after Delete Tracking was installed.
- a read/write error occurred trying to track the file.
- DOS wouldn't allow updating the tracking file.

The following drives are supported:

Drive x - 25
Drive y - Default

Drive x was forced to have 25 entries by virtue of the parameters entered (i.e. /Tx-25). The number of entries used for drive y will be calculated from the following information (here, the user entered /Ty with no entry count).

for 360K or less	25	5K
720K	50	9K
1.2Meg	75	14K
1.44Meg	75	14K
less than 20Meg	101	18K
up to 32M	202	36K
Over 32M	303	55K

PC-Cache

PC Setup installs PC-Cache in your AUTOEXEC.BAT file (PC-CACHE/IA/IB). Then when PC-Cache installs, it looks for the types of memory you have installed in your computer and when found, loads into the first available memory type it finds in this order: expanded memory, extended memory, conventional memory. If you experience any of the following problems, or if PC-Cache issues any of the errors listed below, we have provided a number of steps you can use to try to isolate the problem:

Problems:

PC-Cache "hangs" loading in the AUTOEXEC.BAT and prevents the rest of the AUTOEXEC.BAT from executing.

Accessing the drive after PC-Cache is installed "hangs" the computer.

Accessing the drive after PC-Cache is installed gives the "Sector not Found" or "Drive Not Ready" error.

Errors:

Drive X can't be cached, physical unit unknown.

If the drive is a network drive or RAM disk, it cannot be recognized or cached. If the drive is a normal hard drive or hard drive partition, something may have happened to the boot sectors of the drive which PC-Cache cannot recognize. Backing up the drive, reformatting, and restoring normally fixes the problem.

Sector Not Found.

After installing PC-Cache, if accessing the cached drive gives the "Sector not found" message, add /x to the parameter line at the DOS prompt and see if this helps. If you are using NEC or WYSE 3.3 DOS to partition your hard disk larger than 40 megabytes as a single partition, use the /x parameter. This forces PC-Cache to use a different protocol (either DOS 3.3 and higher or DOS 3.2 and lower).

What to do:

1. Rename the AUTOEXEC.BAT and reboot. Type at the DOS prompt:

   ```
   PC-CACHE /IA/IB/SIZE=64K
   ```

2. Press Return. (This forces a small cache into conventional memory which helps determine what the problem is.) If this works, then the problem was that PC-Cache was installing into extended or expanded memory and that's when the problem occurred.

   In this case, you may want to cache in a different memory type. For example, if your problem occurs in extended memory, use the SIZEXP= parameter below to force cache to expanded memory. At the DOS prompt type:

   ```
   PC-CACHE/UNLOAD  (this will unload PC-Cache from memory)
   ```

Then retry the following to force cache to the alternate memory type:

```
PC-CACHE/IA/IB/SIZEXT=64K  (for extended memory)
PC-CACHE/IA/IB/SIZEXP=64K  (for expanded memory)
PC-CACHE/IA/IB/SIZE=64K    (for conventional memory)
```

If this fails or if PC-Cache fails to install in conventional memory, then there may be a hardware incompatibility problem or a problem with a driver, so call our technical support staff. We may have more information about a compatibility problem as updates are made available.

Expanded Memory Manager Problem, Function XX, Status = XX

PC-Cache is calling a needed function and the expanded memory manager gives back an answer which indicates it does not fully support that function. Try a newer driver if one is available.

Compress

System reboot recommendation CAUTION!!! Disk directories have been rewritten during the Compress function and may now conflict with directory pointers maintained by certain memory resident programs. If disk–oriented memory resident programs like FASTOPEN are active, or if a disk caching subsystem is in use, it is highly recommended that the system be rebooted before continuing. Press any key to terminate Compress.

If a hard drive was compressed then this message will appear when exiting COMPRESS. The warning is for those systems that have memory–resident or unusual software operating that keeps hard drive location dependent information and fails to either refresh or flush that information when the internal DOS "disk reset" command is executed. An example of this is found in DOS 3.3. Its own FASTOPEN command, which keeps copies of recently used directory entries, does not invalidate or flush its own internal buffers when a "disk reset" is issued. FASTOPEN does not recognize that COMPRESS has relocated files and if the files tracked by FASTOPEN are subsequently used, DOS gets thoroughly confused and may destroy data. Some other disk caching programs are also guilty of this. PC Tools own resident programs have no incompatibility problems with COMPRESS.

Parameter Specification Error.

The command line parameters specified were invalid. Check them and restart.

ORCHID TECHNOLOGY Turbo-286e mode has been detected. Your Disk(ette) files may be damaged! Slower mode is recommended for COMPRESS.

Orchid technology has recommended that this particular board not be employed in its TURBO mode to run PCBACKUP, PCRESTOR or even COMPRESS. This is a limitation of the Turbo-286e board. Put the Turbo-286e board into its slow mode before running.

Data error (CRC).

This generally indicates a bad sector on the disk. Use Disk Verify in PC Shell to try to determine the problem.

Seek error.

This error indicates a hardware problem of some sort.

Error # nnn Requested compression failed.

If you receive any of the following numbered errors along with the "Requested compression failed" message, this is what they mean:

nnn=000-050 (Invalid choice).

Depending on which of the following error code you see, go back and make a valid selection. In the case of using old DOS, you will have to update to 2.0 or higher before you can continue.

000	Invalid parameters specification
010	Pre-DOS 2.0- cannot continue
020	Invalid drive specification
030	Invalid option selected
040	Invalid function key depressed
050	Invalid key depressed

nnn=060-130 (Memory errors)

The following messages indicate that the drive being processed with COMPRESS may have too many files or sub-directories to process. If you see these messages, COMPRESS is not compatible with your drive. You also may have more files on your hard disk than Compress is currently able to handle (its range is approximately 6-7,000 files).

060	Directory table buffer overflowed

070	Memory block table overflow

The following errors indicate that you need more memory or you need to remove some of your resident programs. COMPRESS can require up to 256K depending on the drive being processed. This message may also appear if there are more files on the drive than COMPRESS currently supports.

In the case of memory errors, be sure that you have cleared all memory resident programs before you start Compress or you may try booting without the AUTOEXEC.BAT file.

080	Hidden cache table overflow
090	Invalid memory block segment
100	Memory block never allocated
110	Memory not available for allocation
120	Memory not available for directory
130	Memory not available for buffers

nnn = 200-230 (Sector Related Messages)

These errors indicate either a physical problem with the drive or a logical problem with the DOS control information. First run CHKDSK to guarantee the integrity of the logical DOS information. It may be necessary to use the /F parameter with CHKDSK to correct errors. Or use the surface scan to check the readability of the data on the drive.

200	Sector nnnnn not found
210	No free sectors available
220	Unrecoverable read error
230	Bad cluster found in file chain

320 – Invalid File Allocation Table

The FAT information appears invalid. Use CHKDSK /F to correct.

550 – MIRROR.COM Terminated with errors.

When attempting to run MIRROR.COM, DOS could not fulfil the request due to a lack of memory or not being able to find MIRROR.COM. If memory is insufficient, you can run MIRROR by itself after exiting COMPRESS. If MIRROR.COM cannot be located, it may be because MIRROR.COM is not in the same sub–directory as COMPRESS or you have removed the disk that was used to execute COMPRESS.

600 – No Root Directory Filenames.

No files are allocated on the drive so no compression can be done.

610 – Insufficient Disk Space Available.

A minimum of two free clusters should be present on the disk being compressed. You may need to delete a file or move one to another disk.

620 – Diskette Allocation Exceeded
630 – Unattached File Cluster Encountered.

These errors indicate that COMPRESS found information contrary to what it expected. Run CHKDSK /F to correct any problems and rerun COMPRESS.

WARNING! Cross–linked files have been encountered!
WARNING! Unattached clusters have been encountered!
WARNING! DISK maintenance should be performed!
Recommend running CHKDSK /F before continuing.

These messages are issued when various problems are encountered that only CHKDSK /F can cure. These are logical problems that CHKDSK is designed to sort out and fix. COMPRESS will refuse to operate on any disk that has problems of this nature.

Fragmentation encountered – compress recommended.

There is definitely one or more fragmented files on the disk. Compression will reorganize the data, removing the fragmentation.

Fragmentation not encountered – evaluate with ORGANIZATION ANALYSIS option

It is possible that no files are fragmented, but something may be out of place. For instance, a newly created sub–directory is located in back of the disk. Moving it to the front of the disk will aid DOS performance when searching for files.

File chain overflowed File Allocation Table.

An entry in the File Allocation Table points to the next file cluster. One was discovered that points outside of the bounds of the File Allocation Table. In other words, it is invalid. Run CHKDSK /F to evaluate.

Drive not ready – press any key to retry, or Esc to cancel.

Usually, this means the diskette drive door is open.

WARNING! Insufficient disk(ette) space available for COMPRESS.

A minimum of two free clusters should be present on the disk being compressed. You may need to delete a file or move one to another disk

800 – Write Protected Diskette
808 – Drive Failed to Respond
812 – Unknown Command Encountered
816 – Data Error (CRC)
824 – Seek Operation Failed
828 – Unknown Media Type
832 – Requested Sector Not Found
836 – Printer does not Respond
840 – Write Fault Encountered
844 – Read Fault Encountered
848 – General Request Failure
860 – Unidentified Error Code
999 – Unidentified Message Number

These are errors passed back from DOS is response to various requests. Correct any obvious errors and rerun COMPRESS. If data errors are detected, the surface scan should be run before compressing again.

Mirror is Unsuccessful.

This may occur if you were using PC Shell in Shell mode and ran Compress. Return to PC Shell and turn the "Quick Run" option off (found in the Options menu when PC Shell is run in Shell mode.) Now, try running Compress again.

PC Format

INT 25 error on sector 00000000h, code 0207h

This usually happens with a hard drive that has been partitioned with IBM DOS 4.0, but never formatted with DOS 4. This is a bug in DOS 4.0 and not PC Format. Formatting the drive with regular DOS FORMAT will allow PC Format to work fine in the future.

PC Format will not format a 1.44 megabyte disk. Gets "Device type unknown" error.

Try using DOS 3.3 or higher.

Appendix C

Technical Support

Central Point Software is backed up by a technical support staff trained to provide you with fast, courteous service. If you need assistance beyond what the manual, Help feature, and README.TXT file can provide, please write or call us with the information listed in the Technical Support Checklist below.

Mail

Write to Central Point Software, Inc.
15220 NW Greenbrier Pkwy., Suite 200
Beaverton, OR 97006
Attn: Technical Support

FAX

You can also FAX the information about your problem.
Our FAX number : (503) 690-8083

Phone

(503) 690-8080.

Dial 1 then extension 5700 anytime after the automated attendant has answered; you do not need to listen for the message to be completed. Our business hours are 8-5 PST, Monday-Friday.

It would help if you called from a phone next to the computer you're having problems with. Your computer should be turned on and ready to go.

Bulletin Board System

For the latest PC Tools Deluxe updates and new information, dial into our new BBS. The phone number is (503) 690-6650.

CPS Bulletin Board Script File

If you have PC Tools Desktop, there is a script file for logging on to Central Point's BBS - CPS_BBS.SCR. The first time that you use the BBS you will need to log on manually (without the script file) to get your user name and password. After you have them, put them in the indicated positions in the script file. Then you can select the entry in PHONE.TEL to automatically sign on to our BBS and get the latest news from the company.

Technical Support Checklist

Before contacting Central Point Software for technical assistance, please try to recreate the problem to provide us with an exact sequence of events. If the problem reoccurs, contact us by mail, FAX, or phone with the following information:

☐ 1. Central Point Software product: the name, version #, and file* date of the application you are having difficulty with.

*For example, PCBACKUP.EXE 1-19-89 can be found by typing DIR on the program disk or using PC Shell's More File Info command.

☐ 2. System Information: valuable information about your computer system can be easily obtained by using PC Shell's System Info command on the Special pull-down menu. Please include this information, along with the computer brand and model, in your written correspondence or have it accessible when contacting us by phone.

☐ 3. Disk drives: the brand names, sizes, partition sizes and partitioning software.

☐ 4. Additional hardware: the brand names of additional hardware installed in your computer (particularly specialty video cards, expanded memory boards, turbo boards, etc.).

☐ 5. Resident programs: if you had memory resident programs loaded (other than PC Tools Deluxe applications) when the problem occurred, please provide a list of them and their version numbers. Also, please see the Memory Resident Programs appendix of this manual for useful information about memory resident programs.

☐ 6. AUTOEXEC.BAT and CONFIG.SYS contents: Type "TYPE C:\autoexec.bat" or "TYPE C:\config.sys". The contents of these files can also be viewed with PC Tools Desktop's Notepads.

☐ 7. Errors: Write down the exact wording of any error messages received from the Central Point Software product, DOS "CHKDSK," or any other applications.

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DATA RECOVERY AND DOS UTILITIES

PC Tools brings you the easiest to learn and use collection of data recovery and DOS utilities available–at any price. All of PC Tools' products feature full mouse support, pull-down menus and a windowed environment that works with all IBM PCs, PS/2s and 100% compatibles. This PC Tools package features:

- **DOS SHELL.** Simply the easiest to use and most powerful DOS shell available. Uses under 10K of resident memory. Work with two drives or paths simultaneously. Show multiple directories and tree displays in overlapping windows. Locate lost files. Copy or move files just by pointing and dragging with the mouse or keyboard. Add frequently used applications to a run list menu. Sort directories. Edit files in Text HEX or ASCII format. Check disks for errors and move files to safe territory. Plus the most comprehensive set of commands for working with files and disks.

- **VIEWERS/LAUNCHING.** Enhanced file locate, text string search, dBASE,® Lotus® 1-2-3,® ASCII, and HEX viewers make finding the file(s) you want simple. Application launch capability links the data file you select with its associated application and automatically loads them both.

- **UNDELETE.** Allows you to recover files or subdirectories that have been deleted even if they were fragmented. With the CREATE option you can even recover data that no longer has a file name in the directory.

- **MIRROR.** Saves your hard disk's partition table, root directory, and File Allocated Table (FAT) to protect against an accidental format or corrupted drive. Installs into your autoexec.bat file and is run automatically every time you turn on your computer.

- **REBUILD.** Recovers data from a hard or floppy disk that has been accidentally formatted or corrupted (even if you haven't been using Mirror). Unlike other data recovery programs, it won't leave your hard disk unusable–no need to copy data off the hard disk and reformat, as it recovers data in place. It even lets you know if and what files might be corrupted.

- **COMPRESS.** Improves hard disk performance by unfragmenting your files. The longer you have been using your hard disk, the slower it probably is! Compress will immediately restore the performance of your hard disk to its full potential.

- **PC CACHE.** Improves hard and floppy disk access by storing frequently-used information in memory so your computer doesn't have to go back to the disk each time it needs it. Completely reliable, PC CACHE always writes the data immediately, so if power is lost, your data won't be. Fully supports extended and expanded memory.

- **PC SECURE.** Encrypts and compresses your data and programs to full DES specifications. Compresses files by as much as 70% to reduce disk space or minimize modem transfer time. User defined password required for access. The sure way to keep sensitive data safe and secure.

- **PC FORMAT.** A safe format command for hard and floppy disks. Replaces the DOS format command and allows recovery of accidentally formatted disks.

- **NETWORK SUPPORT.** All network-compatible DOS functions supported on Novell and IBM Token Ring networks.

- **REQUIREMENTS.** IBM PC, XT, AT, PS/2 or 100% compatible with DOS 3.0 or higher and 512KB RAM. Hard disk recommended. Supports Microsoft mouse driver version 6.14 or higher, Logitech/Dexxa mouse drivers version 3.4x or higher, or 100% compatible. Separate version available for the Macintosh.

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USA VERSION

036306 U
60M/GAC/7-89

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